

LAND USE APPLICATION SUMMARY

Property Location: 4120 Nawadaha Blvd
Project Name: Iowa Phase II
Prepared By: Peter Crandall, Senior City Planner, (612) 673-2247
Applicant: KTJ 295, LLC
Project Contact: Ben Johnson – Kimley Horn
Request: To construct a new five-story residential building with 144 dwelling units.

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|-----------------------|--------------------|
| Dwelling Units | 144 dwelling units |
|-----------------------|--------------------|

Required Applications:

| | |
|-------------------------------|---|
| Conditional Use Permit | To increase the maximum building height from four stories, 56 feet to five stories, 61 feet. |
| Variance | To the Pedestrian Oriented Overlay District standards to allow building placement greater than 8 feet from the front property line along Nawadaha Blvd. |
| Variance | To reduce the minimum interior side yard setback along the alley from 13 feet to 12 feet. |
| Variance | To reduce the minimum drive aisle dimensions for an on-site surface parking lot. |
| Site Plan Review | For a new five-story residential building with 144 dwelling units. |

SITE DATA

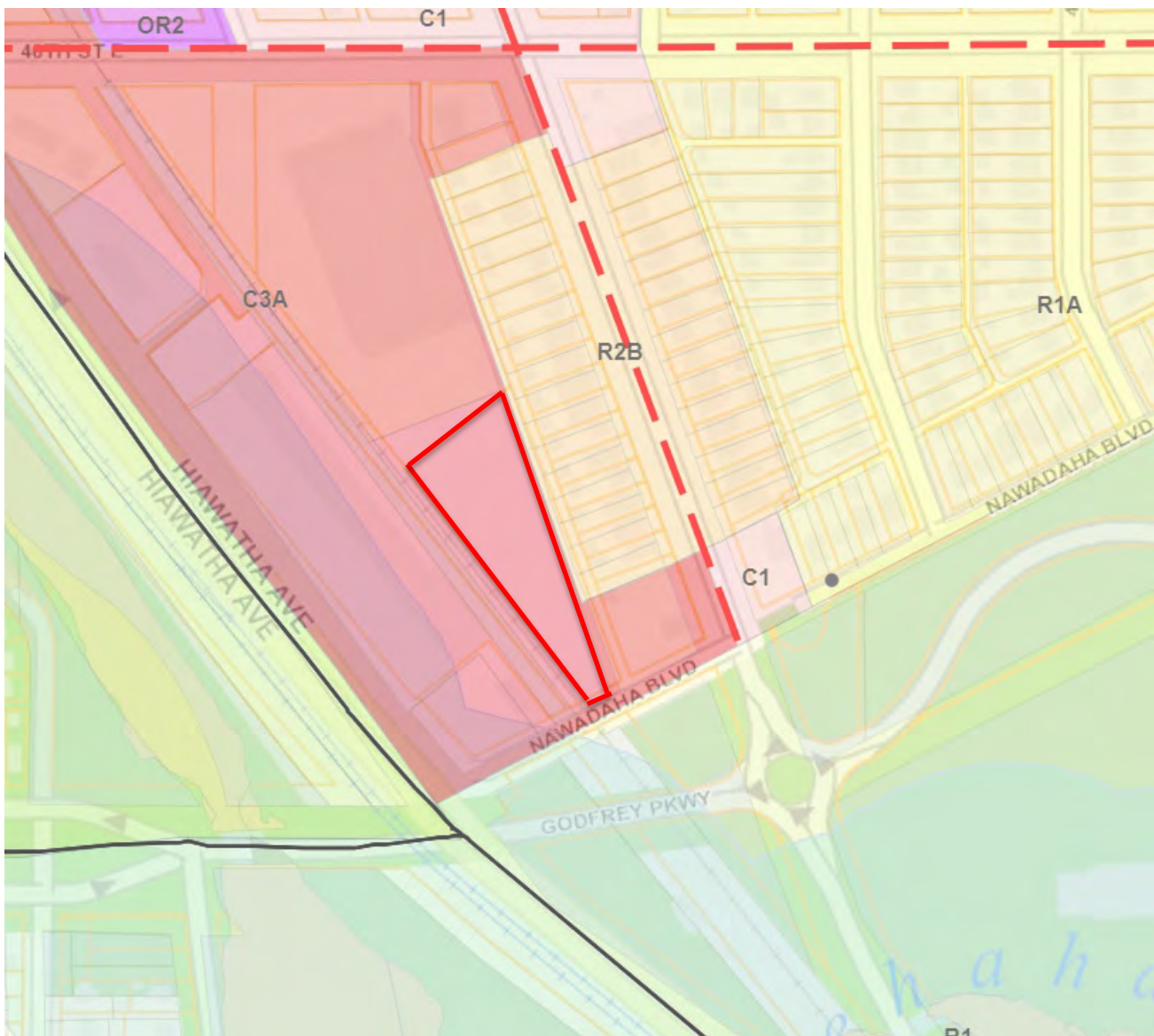
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|------------------------------------|--|
| Existing Zoning | C3A Community Activity Center District Pedestrian Oriented Overlay District |
| Lot Area | 62,964 square feet / 1.46 acres |
| Ward(s) | 12 |
| Neighborhood(s) | Hiawatha |
| Future Land Use | Community Mixed Use |
| Goods and Services Corridor | n/a |
| Built Form | Corridor 6 |

| | | | |
|----------------------------------|-------------------|--------------------------------|--|
| Date Application Deemed Complete | October 22, 2020 | Date Extension Letter Sent | |
| End of 60-Day Decision Period | December 21, 2020 | End of 120-Day Decision Period | |

BACKGROUND

SITE DESCRIPTION AND PRESENT USE. The site is located in the Hiawatha neighborhood, one block west of Minnehaha Avenue and one block east of Hiawatha Avenue. The site is triangular in shape with a small public street frontage along Nawadaha Boulevard and a shared public alley. The site is currently vacant.

SURROUNDING PROPERTIES AND NEIGHBORHOOD. This site is located in the Hiawatha neighborhood and the greater Longfellow area. The site is immediately adjacent to the recent Lowa development to the north, a mixed use building with a ground-level grocery store and four upper levels of residential units. There is a large surface parking lot between the Lowa building and the subject site. Immediately to the east of the project site are several single family homes. To the west along Hiawatha Avenue is a strip mall with several small-scale retail uses. The site is also located less than a block from Minnehaha Regional Park. Minnehaha Avenue, one block to the east of the site, is a Goods and Services corridor.



PROJECT DESCRIPTION. The applicant is proposing to construct a new five-story building on the site with 144 dwelling units. The project would also include 98 enclosed parking spaces in one level of underground parking

and 13 surface parking spaces in a lot accessed via the shared alley. The underground parking would be accessed via a curb cut off Nawadaha Blvd.

The project also includes a proposed shared-use trail along the west property line. The trail is envisioned as an extension of the proposed MN High-Line trail that would run along the east side of Hiawatha Avenue in the rail corridor. The proposed trail would be a 10-foot shared-use paved trail with pedestrian access to walk-up residential uses along the west elevation of the proposed building.

PUBLIC COMMENTS. Any correspondence received prior to the public meeting will be forwarded on to the Planning Commission for consideration.

ANALYSIS

CONDITIONAL USE PERMIT

The Department of Community Planning and Economic Development has analyzed the application to increase the maximum building height in the C3A district from four stories, 56 feet to five stories, 61 feet based on the following findings:

1. *The establishment, maintenance or operation of the conditional use will not be detrimental to or endanger the public health, safety, comfort or general welfare.*

The establishment of a five-story building in this location would not be detrimental to or endanger the public health, safety, comfort, or general welfare. Building height, in general, does not pose a safety threat to the public. The proposed project is largely in keeping with the scale and character of similar development in the area and is consistent with the built form guidance for the Minneapolis 2040 plan which calls for development of up to six stories in height.

2. *The conditional use will not be injurious to the use and enjoyment of other property in the vicinity and will not impede the normal and orderly development and improvement of surrounding property for uses permitted in the district.*

A five-story building in this location will not be injurious to the use and enjoyment of other property in the vicinity and will not impede the orderly development and improvement of surrounding property. The project is located within a transit station area and recent development in the immediate area is of a similar scale and height, including the recent Lowa development immediately to the north. The Minneapolis 2040 built form plan calls for high-density development in transit station areas and allows for up to six stories in height on this parcel.

3. *Adequate utilities, access roads, drainage, necessary facilities or other measures, have been or will be provided.*

The project has received a full review by relevant city departments and has incorporated feedback on access issues from Minneapolis Public Works. The project scope includes the establishment of a shared use trail amenity along the west property line and has been reviewed by the city's transportation planning group for compliance with city standards.

4. *Adequate measures have been or will be taken to minimize traffic congestion in the public streets.*

The project includes 98 enclosed parking spaces in one level of underground parking and 13 surface parking stalls. The project is meeting its minimum vehicle parking requirement. Additionally, the project is located within a light rail transit station area and is served by the A-Line BRT. The project is not expected to dramatically affect traffic in the public street. Based on Public Works feedback the applicant has incorporated changes to the proposed vehicle drop off to restrict access to the alley.

5. *The conditional use is consistent with the applicable policies of the comprehensive plan.*

The proposed use would be consistent with the applicable guidance and policies of Minneapolis 2040 (2020):

| Future Land Use | Guidance | Staff Comment |
|----------------------------|---|--|
| Community Mixed Use | Large-scale mixed use development is encouraged throughout these areas, with commercial uses fronting on major streets. Commercial retail spaces are typically smaller in order to generate pedestrian activity, and are often a destination for customers coming from outside of the market area. Active uses that are accessible to the general public such as office, food service, retail, or medical establishments are required at the street level; therefore single-use residential development is not permitted. Contiguous expansion of commercial zoning is allowed. | The proposed project is large-scale dense residential development. The project incorporates active uses at the ground floor and is improving pedestrian access around the site by implementing a shared-use trail connection. The project does not include any publicly-accessible commercial uses or other active public uses within the structure. The site is limited in its ability to implement public-accessible active uses by its relatively small public street frontage along Nawadaha Blvd. |
| Built Form Guidance | Guidance | Staff Comment |
| Corridor 6 | New and remodeled buildings in the Corridor 6 district should reflect a variety of building types on both moderate and large sized lots. Building heights should be 2 to 6 stories. Building heights should be at least 2 stories in order to best take advantage of the access to transit, jobs, and goods and services provided by the Corridor 6 district. Requests to exceed 6 stories will be evaluated on the basis of whether or not a taller building is a reasonable means for further achieving Comprehensive Plan goals. | The proposed project is five stories, 61 feet in height which is consistent with the Corridor 6 built form guidance. |

The following goals from Minneapolis 2040 (2020) apply to this proposal:

- Goal 3. Affordable and accessible housing: In 2040, all Minneapolis residents will be able to afford and access quality housing throughout the city.
- Goal 6. High-quality physical environment: In 2040, Minneapolis will enjoy a high-quality and distinctive physical environment in all parts of the city.
- Goal 9. Complete neighborhoods: In 2040, all Minneapolis residents will have access to employment, retail services, healthy food, parks, and other daily needs via walking, biking, and public transit.
- Goal 10. Climate change resilience: In 2040, Minneapolis will be resilient to the effects of climate change and diminishing natural resources, and will be on track to achieve an 80% reduction in greenhouse gas emissions by 2050.

The following policies and action steps from Minneapolis 2040 (2020) apply to this proposal:

Policy 1. Access to Housing: Increase the supply of housing and its diversity of location and types.

- a. Allow housing to be built in all areas of the city, except in Production and Distribution areas.
- c. Allow multifamily housing on public transit routes, with higher densities along high-frequency routes and near METRO stations.

Policy 4. Access to Commercial Goods and Services: Improve access to goods and services via walking, biking and transit.

- e. Allow for increased housing supply within and adjacent to Commercial areas.
6. *The conditional use shall, in all other respects, conform to the applicable regulations of the district in which it is located.*

If the requested land use applications are approved, the proposal will comply with all provisions of the C3A District.

Additional Standards to Increase Maximum Height

In addition to the conditional use permit standards, the Planning Commission shall consider, but not be limited to, the following factors when determining the maximum height of principal structures in commercial districts:

1. *Access to light and air of surrounding properties.*

The project will not significantly limit access to light and air for surrounding properties. The project site is approximately 1.5 acres and the proposed structure is separated by large setbacks and open spaces from any adjacent development. There is a public alley between the proposed structure and the adjacent small-scale residential uses to the east. A public utility easement creates a clear separation between the proposal and the adjacent strip mall to the west. The nearby Iowa project is separated from the proposal by a large surface parking lot.

2. *Shadowing of residential properties, significant public spaces, or existing solar energy systems.*

The project is not expected to have significant shadowing effect on adjacent residential properties. The shadow study shows that shadowing would be limited to the end of the day and most pronounced during winter months.

3. *The scale and character of surrounding uses.*

The project is in keeping with the scale and character of recent development in the transit station area and is consistent with the built form guidance for the site.

4. *Preservation of views of landmark buildings, significant open spaces or water bodies.*

The project is not expected to impact views of landmark buildings significant open spaces or water bodies.

VARIANCE

The Department of Community Planning and Economic Development has analyzed the application for a variance of the Pedestrian Oriented Overlay District standards to allow a building placement greater than 8 feet from the front property line along Nawadaha Blvd, based on the following findings:

1. *Practical difficulties exist in complying with the ordinance because of circumstances unique to the property. The unique circumstances were not created by persons presently having an interest in the property and are not based on economic considerations alone.*

Practical difficulties exist in complying with the ordinance because of circumstances unique to the property. The project parcel is triangular in shape with the narrow end located along Nawadaha Blvd. The public street

frontage along the Nawadaha Blvd property line is approximately 60 feet, whereas the north property line is approximately 220 feet in width. Additionally, there is an approximately 20-foot-wide utility easement for power lines along the south end of the site which further limits the ability to place a functional building within eight feet of the public street. This circumstance was not created by the applicant.

2. *The property owner or authorized applicant proposes to use the property in a reasonable manner that will be in keeping with the spirit and intent of the ordinance and the comprehensive plan.*

The proposed building placement is reasonable and in keeping with the spirit and intent of the ordinance, with the conditions recommended by staff. The PO Pedestrian Oriented Overlay District is established to preserve and encourage the pedestrian character of commercial areas and to promote street life and activity by regulating building orientation and design and accessory parking facilities, and by prohibiting certain high impact and automobile-oriented uses. The project is largely in keeping with the guidance for the site under the Pedestrian Oriented Overlay District, including incorporating active uses along the front elevation and window area. Additionally, the applicant is proposing to enhance pedestrian access through the site by implementing a new shared-use trail along the south property line.

The proposed vehicle turnaround in the front of the structure between the building and the front property line is not in keeping with the guidance for the Pedestrian Oriented Overlay. In general, the Comprehensive Plan and zoning ordinance discourage vehicle parking and circulation space between the building and the public right of way and especially in the Pedestrian Oriented Overlay. CPED is recommending a condition of approval that the applicant modify the design of the site to remove the proposed vehicle turnaround and implement a separate pedestrian access point to the front entrance.

3. *The proposed variance will not alter the essential character of the locality or be injurious to the use or enjoyment of other property in the vicinity. If granted, the proposed variance will not be detrimental to the health, safety, or welfare of the general public or of those utilizing the property or nearby properties.*

The proposed variance will not alter the essential character of the locality or be injurious to the use and enjoyment of other property in the vicinity nor will it adversely affect the public health or welfare. The site is currently vacant and the proposed project will add a significant amount of pedestrian activity and infrastructure to an under-utilized area in the transit station area. The practical difficulties on the site make it difficult to implement a project that adheres strictly to the building setback requirements. With the proposed conditions of approval, the project will meet the intent and spirit of the ordinance and Comprehensive Plan.

VARIANCE

The Department of Community Planning and Economic Development has analyzed the application for a variance to reduce the minimum interior side yard along the public alley from 13 feet to 12 feet, based on the following findings:

1. *Practical difficulties exist in complying with the ordinance because of circumstances unique to the property. The unique circumstances were not created by persons presently having an interest in the property and are not based on economic considerations alone.*

The C3A district does not have minimum yard requirements. The minimum interior side yard setback requirement of 13 feet along the alley is a reflective yard requirement due to the adjacent residentially-zoned parcels. The proposed building is located 12 feet from the property line at two points along the east elevation. Practical difficulties exist in complying with the ordinance because of circumstances unique to the property. The subject parcel is triangular in shape with the narrow end located along Nawadaha Blvd. The public street frontage along the Nawadaha Blvd property line is approximately 60 feet, whereas the north property line is approximately 220 feet in width. Additionally, there is an approximately 20-foot-wide utility easement for

power lines along the south end of the site which further limits the ability to place a functional building on the site while meeting the required reflective setback.

2. *The property owner or authorized applicant proposes to use the property in a reasonable manner that will be in keeping with the spirit and intent of the ordinance and the comprehensive plan.*

In general, yard controls are established to provide for the orderly development and use of land and to minimize conflicts among land uses by regulating the dimension and use of yards in order to provide adequate light, air, open space and separation of uses. The proposed setback is reasonable and in keeping with the spirit and intent of the ordinance. The proposed structure is located across a public alley from the adjacent residential properties and will provide adequate space for access to light and air and is expected to have minimal shadowing effect. The vast majority of the structure is located more than 13 feet from the interior lot line, and a proposed surface parking lot provides additional separation between uses.

3. *The proposed variance will not alter the essential character of the locality or be injurious to the use or enjoyment of other property in the vicinity. If granted, the proposed variance will not be detrimental to the health, safety, or welfare of the general public or of those utilizing the property or nearby properties.*

The proposed variance will not alter the essential character of the locality or be injurious to the use and enjoyment of other property in the vicinity, nor will it be detrimental to the health and welfare of the public. The proposed setback and building placement are consistent with recent development within the transit station area and along the shared alley. The recently completed Iowa project just to the north of the proposal is located closer to the existing alleyway. The vast majority of the proposed project is well within the setback requirement of 13 feet.

VARIANCE

The Department of Community Planning and Economic Development has analyzed the application for a variance to reduce the minimum drive aisle dimensions for the proposed surface parking lot based on the following findings:

1. *Practical difficulties exist in complying with the ordinance because of circumstances unique to the property. The unique circumstances were not created by persons presently having an interest in the property and are not based on economic considerations alone.*

The minimum drive aisle dimension for a two-way parking lot with perpendicular parking is 22 feet. There are no practical difficulties on the site that would necessitate the reduction of minimum drive aisle dimensions for an on-site surface parking lot. The applicant could reduce the number of proposed parking stalls to comply with the minimum drive aisle dimensions without significantly altering the site plan.

2. *The property owner or authorized applicant proposes to use the property in a reasonable manner that will be in keeping with the spirit and intent of the ordinance and the comprehensive plan.*

In general, the zoning code requires that each off-street parking space shall open directly to an aisle or driveway of such width and design as to provide safe and efficient means of vehicular access to such parking spaces. Additionally, the code requires that all maneuvers associated with parking shall occur in the off-street parking area, except where accessory to single or two-family dwellings, or cluster developments or multiple-family dwellings of three (3) or four (4) units. The proposed parking lot is in compliance with the minimum drive aisle dimension of 22 feet for a portion of the lot, but several spaces would require maneuvering in the public alley. The applicant is able to meet their minimum parking requirement for the residential structure in the proposed underground parking area. The project is located within a transit station area and excess parking that does not meet the requirements of the zoning code is not reasonable nor is it in keeping with the spirit and intent of the ordinance or the Comprehensive Plan as it relates to the Pedestrian Oriented Overlay district and transit station area policies.

3. *The proposed variance will not alter the essential character of the locality or be injurious to the use or enjoyment of other property in the vicinity. If granted, the proposed variance will not be detrimental to the health, safety, or welfare of the general public or of those utilizing the property or nearby properties.*

The proposed variance would alter the essential character of the area and may be injurious to the use and enjoyment of other property in the vicinity. The proposed project shares the alley with several small-scale residential uses. Vehicles that use the alley for maneuvering space could pose a hazard to other residential users of the alley. Recent development in the area, including the Iowa development immediately to the north, has conformed to parking area design and maintenance requirements.

SITE PLAN REVIEW

The Department of Community Planning and Economic Development has analyzed the application based on the required findings and applicable standards in the site plan review chapter:

Applicable Standards of Chapter 530, Site Plan Review

BUILDING PLACEMENT AND DESIGN

Building placement – Requires variance(s) and alternative compliance

- The proposed project requires a variance to the Pedestrian Oriented Overlay district standards for building placement. The standards require that buildings be located no more than 8 feet from the front property line. The proposed project is located approximately 115 feet from the front property line.
- The area between the building includes some pedestrian amenity space. It also includes a large vehicle turn-around space. CPED is recommending a condition of approval that the applicant remove the vehicle turn around and replace it with pedestrian amenity space and/or landscaping.

Principal entrances – Meets requirements

- The proposed project would comply with the principal entrances standards.
- The principal entrance to the building is located on the Nawadaha Blvd facing elevation.

Visual interest – Meets requirements

- The proposed project would comply with the visual interest standards.

Exterior materials – Requires alternative compliance

- The applicant is proposing brick, fiber cement, and metal panel as the building's primary exterior materials. Exterior material changes at a later date may require review by the Planning Commission and an amendment to the site plan review.
- Two of the proposed exterior elevations exceed the maximum allowable amount of fiber cement. The applicant is requesting alternative compliance for this requirement.

Percentage of Exterior Materials per Elevation

| Material | Allowed Max | North | South | East | West |
|------------------------------|-------------|-------|-------|------|------|
| Brick (face) | 100% | 34% | 22% | 28% | 21% |
| Glass | 100% | 30% | 32% | 29% | 33% |
| Metal Panel | 75% | 10% | 19% | 10% | 15% |
| Fiber Cement ($\leq 5/8"$) | 30% | 26% | 27% | 33% | 31% |

Windows – Meets requirements

- The proposed project would comply with the minimum window requirements.
- For residential uses, the zoning code requires that no less than 20 percent of the walls on the first floor, and no less than ten percent of the walls on each floor above the first that face a public street, public sidewalk, public pathway, or on-site parking lot, shall be windows. The project is in compliance with the minimum window requirement.
- All windows are vertical in proportion and are evenly distributed along the building walls.

Window Requirements for Residential Uses

| Floor | Code | | Proposed | |
|--------------------------------|-------------|-------------|----------|-------------|
| 1st floor (Nawadaha) | 20% minimum | 105 sq. ft. | 55% | 291 sq. ft. |
| 1st floor (Parking lot) | 20% minimum | 428 sq. ft. | 32% | 687 sq. ft. |
| 2nd floor and above | 10% minimum | 309 sq. ft. | 23% | 728 sq. ft. |

Ground floor active functions – Meets requirements

- The proposed project would comply with the ground floor active functions requirements.
- The ground floor facing Nawadaha contains 100 percent (64 feet) active functions. At least 70 percent of the first floor building frontage facing the public street, public sidewalk, or public walkway contains active functions.

Roof line – Meets requirements

- The principal roof line of the building would be similar to that of surrounding buildings.

Parking garages – Meets requirements

- The proposed parking garage would comply with the applicable site plan review standards. All enclosed parking is proposed to be located below grade.

ACCESS AND CIRCULATION**Pedestrian access – Meets requirements with Conditions of Approval**

- The code requires that there be clear and well-lit walkways at least four feet in width connecting building entrances to the adjacent public sidewalk and on-site parking facilities. The project is proposing to accommodate pedestrian access to the principal entrance via the shared-use trail. CPED is recommending a condition of approval that the applicant provide a separate pedestrian access path that connects the front entrance to the public sidewalk, separate from and in addition to the shared-use trail.

Transit access – Not applicable

- No transit shelters are proposed as part of this development.

Vehicular access – Requires variance(s)

- The applicant is proposing vehicle access to the underground parking area via a curb cut from Nawadaha Blvd. This is consistent with Public Works guidance. The proposed surface parking lot would be accessed via the shared alley. The surface lot does not meet the minimum drive aisle dimensions. The applicant is seeking a variance to reduce the minimum drive aisle for several surface parking spaces. CPED is recommending a condition of approval that the applicant modify the site plan to meet the design standards for surface lots.

LANDSCAPING AND SCREENING**General landscaping and screening – Meets requirements**

- The proposal is in compliance with the general landscaping requirements (see table).

Landscaping and Screening Requirements

| Requirement | Required | Proposed |
|-------------------------------|---------------|----------------|
| Lot Area | -- | 62,964 sq. ft. |
| Building Footprint | -- | 26,552 sq. ft. |
| Area Not Covered by Buildings | -- | 36,412 sq. ft. |
| Landscaped Area | 7,282 sq. ft. | 12,627 sq. ft. |
| Canopy Trees (1:500 sq. ft.) | 14 trees | 20 trees |
| Shrubs (1:100 sq. ft.) | 72 shrubs | 612 shrubs |

Parking and loading landscaping and screening – Meets requirements with Conditions of Approval

- The parking area abutting or across the alley from a residence or office residence district, or any residential use, contains an on-site landscaped yard of at least seven feet in width. The landscape buffer is not broad enough to screen all proposed parking spaces. This is primarily due to the large curb cut necessary to accommodate a drive aisle that does not meet minimum dimensional requirements. CPED is recommending a condition of approval that the applicant modify the design of the proposed surface parking lot to meet design and screening standards.

Additional landscaping requirements – Meets requirements

- The project appears to comply with the additional landscaping requirements in sections 530.180, 530.190, 530.200, and 530.210 of the zoning code.

ADDITIONAL STANDARDS**Concrete curbs and wheel stops – Meets requirements**

- The parking lot would be defined by a six-inch by six-inch continuous concrete curb.

Site context – Meets requirements

- The proposed project would comply with the site context requirements.

Crime prevention through environmental design – Meets requirements with Conditions of Approval

- The proposed project would generally comply with crime prevention through environmental design (CPTED) standards.
- CPED is recommending a condition of approval that the applicant implement a clear and well-lit pathway between the public sidewalk and principal entrance separate from the proposed shared-use trail.

Historic preservation – Not applicable

- This site is neither historically designated or located in a designated historic district, nor has it been determined to be eligible for designation.

Applicable Regulations of the Zoning Ordinance

The proposed use is permitted in the C3A District.

Off-street Parking and Loading – Meets requirements with Conditions of Approval

- The proposed project complies with the applicable vehicle parking, bicycle parking, and loading requirements.

Vehicle Parking Requirements Per Use (Chapter 541)

| Use | Minimum | Reductions | Minimum | Maximum | Proposed |
|-----------------------|---------|-------------------------|---------|---------|----------|
| Residential Dwellings | 144 | Transit Incentives (72) | 72 | n/a | 116 |

Bicycle Parking Requirements (Chapter 541)

| Use | Minimum | Short-Term | Long-Term | Proposed |
|-----------------------|---------|------------|-------------------|----------|
| Residential Dwellings | 72 | -- | Not less than 90% | 72 |

Loading Requirements (Chapter 541)

| Use | Loading Requirement | Loading Spaces | Proposed |
|-----------------------|---------------------|----------------|---------------|
| Residential Dwellings | 1 small space | 1 small space | 1 small space |

Building Bulk and Height – Requires conditional use permit

- The project requires a conditional use permit to exceed the maximum building height.

Building Bulk and Height Requirements

| Requirement | Code | Bonuses | Total | Proposed |
|-----------------------|--|-----------------------------|-------|--------------------------------|
| Lot Area | -- | -- | -- | 62,964 sq. ft. / 1.46 acres |
| Gross Floor Area | -- | -- | -- | 125,922 sq. ft. |
| Min. Floor Area Ratio | 1.0 | -- | -- | 2.0 |
| Max. Floor Area Ratio | 2.7 | + 0.34 for enclosed parking | 3.24 | 2.0 |
| Max. Building Height | 4 stories or 56feet, whichever is less | | | 5 stories, 61 ft. |

Lot and Residential Unit Requirements – Meets requirements

- The proposed project would meet the applicable lot and residential unit requirements.
- The application is subject to Inclusionary Zoning per section 535.90(a) of the zoning code.

Lot and Residential Unit Requirements Summary

| Requirement | Code | Proposed |
|-------------------------|--------------------|-----------------|
| Lot Area | 5,000 sq. ft. min. | 62.964 sq. ft. |
| Lot Width | 40 ft. min. | 62 ft. |
| Impervious Surface Area | n/a | 79% |
| Lot Coverage | n/a | 42% |
| Dwelling Units (DU) | -- | 144 DUs |
| Net Residential Area | -- | 125,922 sq. ft. |

Yard Requirements – Requires variance(s)

- Project in the C3A district are not subject to yard requirements. The applicant requires a variance to a reflective yard requirement due to its proximity to residential property across the public alley to the east. The requirement in that location is 13 feet and the applicant is proposing a setback of 12 feet.

Minimum Yard Requirements

| Setback | Zoning District | Overriding Regulations | Total Requirement | Proposed |
|----------------------|-----------------|----------------------------|-------------------|----------|
| Front (South) | n/a | -- | n/a | 116 ft. |
| Interior Side (East) | n/a | 13 foot reflective setback | 13 ft. | 12 ft. |
| Interior Side (West) | n/a | -- | n/a | 27 ft. |
| Rear (North) | n/a | -- | n/a | 13 ft. |

Signs – Not applicable

- All signs are subject to Chapter 543, On-Premise Signs. The applicant will be required to submit a separate sign permit application for any signage that is proposed.
- The applicant is proposing is not currently proposing any signage. CPED is recommending a condition of approval that any future signage meets the requirements of chapter 543.

Screening of Mechanical Equipment – Meets requirements with Conditions of Approval

- Mechanical equipment is subject to the screening requirements of Chapter 535 and district requirements.
- CPED is recommending a condition of approval that the applicant meet the screening requirements of chapter 535.

Refuse Screening – Meets requirements

- Refuse and recycling storage containers are subject to the screening requirements in Chapter 535.
- All refuse and recycling storage containers are located within the building.

Lighting – Meets requirements with Conditions of Approval

- Existing and proposed lighting must comply with Chapter 535 and Chapter 541 of the zoning code.
- The applicant has provided a photometric lighting plan. The plan indicates that the applicant has not proposed any lighting along the west elevation of the structure or the proposed shared use trail. CPED is

recommending a condition of approval that the applicant implement pedestrian scale lighting along all public pathways and along the west elevation of the building at the proposed walk-up residential units.

Fences – Not applicable

- The applicant is not proposing any fencing as part of this project.

Specific Development Standards – Not applicable

- There are no specific development standards for this use in Chapter 536.

Pedestrian Oriented Overlay District Standards – Requires variance(s)

- The project requires a variance to the Pedestrian Oriented Overlay District standards to allow building placement further than 8 feet from the front property line along Nawadaha Blvd.

Applicable Policies of the Comprehensive Plan

The proposed use would be consistent with the applicable guidance and policies of *Minneapolis 2040 (2020)*:

| Future Land Use | Guidance | Staff Comment |
|----------------------------|---|--|
| Community Mixed Use | Large-scale mixed use development is encouraged throughout these areas, with commercial uses fronting on major streets. Commercial retail spaces are typically smaller in order to generate pedestrian activity, and are often a destination for customers coming from outside of the market area. Active uses that are accessible to the general public such as office, food service, retail, or medical establishments are required at the street level; therefore single-use residential development is not permitted. Contiguous expansion of commercial zoning is allowed. | The proposed project is a large-scale dense residential development. The project incorporates active uses at the ground floor and is improving pedestrian access around the site by implementing a shared-use trail connection. The project does not include any publicly-accessible commercial uses or other active public uses within the structure. The site is limited in its ability to implement public-accessible active uses by its relatively small public street frontage along Nawadaha Blvd. |
| Built Form Guidance | Guidance | Staff Comment |
| Corridor 6 | New and remodeled buildings in the Corridor 6 district should reflect a variety of building types on both moderate and large sized lots. Building heights should be 2 to 6 stories. Building heights should be at least 2 stories in order to best take advantage of the access to transit, jobs, and goods and services provided by the Corridor 6 district. | The proposed project is five stories, 61 feet in height which is consistent with the Corridor 6 built form guidance. |

| | | |
|--|---|--|
| | Requests to exceed 6 stories will be evaluated on the basis of whether or not a taller building is a reasonable means for further achieving Comprehensive Plan goals. | |
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The following goals from Minneapolis 2040 (2020) apply to this proposal:

- Goal 3. Affordable and accessible housing: In 2040, all Minneapolis residents will be able to afford and access quality housing throughout the city.
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- Goal 9. Complete neighborhoods: In 2040, all Minneapolis residents will have access to employment, retail services, healthy food, parks, and other daily needs via walking, biking, and public transit.
- Goal 10. Climate change resilience: In 2040, Minneapolis will be resilient to the effects of climate change and diminishing natural resources, and will be on track to achieve an 80% reduction in greenhouse gas emissions by 2050.

The following policies and action steps from Minneapolis 2040 (2020) apply to this proposal:

Policy 1. Access to Housing: Increase the supply of housing and its diversity of location and types.

- a. Allow housing to be built in all areas of the city, except in Production and Distribution areas.
- c. Allow multifamily housing on public transit routes, with higher densities along high-frequency routes and near METRO stations.

Policy 4. Access to Commercial Goods and Services: Improve access to goods and services via walking, biking and transit.

- e. Allow for increased housing supply within and adjacent to Commercial areas.

Alternative Compliance

The Planning Commission or zoning administrator may approve alternatives to any site plan review requirement upon finding that the project meets one of three criteria required for alternative compliance. Alternative compliance is requested for the following requirements:

| Standard | Description | Staff Recommendation |
|--|--|---|
| Exterior Materials (Durability standards) | The applicant is proposing to exceed the allowable amount of fiber cement panels on two of the elevations. The East elevation is proposing 33 percent fiber cement and the west elevation is proposing 31 percent. 30 percent is the allowable maximum per elevation for fiber cement that is less than 5/8 inches in thickness. | The amount of fiber cement in excess of the requirement is small and overall the composition and number of materials is in line with the standards of the ordinance. <u>Staff recommends granting alternative compliance.</u> |
| Building Placement | The applicant is proposing to locate the building 116 feet from the front property line. In general, the Site Plan Review chapter calls for buildings to be located no | CPED is recommending a condition of approval that the applicant modify the design of the site to remove the vehicle turnaround |

| | | |
|--|--|---|
| | <p>more than 8 feet from the front property line where practical and the Pedestrian Oriented Overlay District requires it by ordinance. The applicant is seeking a variance to allow the building placement to be further than 8 feet from the front property line. The applicant is proposing a vehicle turnaround space between the building and the front property line. The Site Plan Review chapter of the zoning code and the Pedestrian Oriented Overlay district discourage vehicle parking and circulation space between a building and the public right of way. The PO Pedestrian Oriented Overlay District is established to preserve and encourage the pedestrian character of commercial areas and to promote street life and activity by regulating building orientation and design and accessory parking facilities, and by prohibiting certain high impact and automobile-oriented uses.</p> | <p>area front the front of the building and replace it with either pedestrian space or landscaping.</p> |
|--|--|---|

RECOMMENDATIONS

The Department of Community Planning and Economic Development recommends that the City Planning Commission adopt staff findings for the applications by KTJ 295 LLC for the properties located at 4120 Nawadaha Blvd:

A. Conditional Use Permit.

Recommended motion: **Approve** the conditional use permit to increase the maximum building height in the C3A district from four stories, 56 feet to five stories, 61 feet, subject to the following conditions:

1. The conditional use permit shall be recorded with Hennepin County as required by Minn. Stat. 462.3595, subd. 4 before building permits may be issued or before the use or activity requiring a conditional use permit may commence. Unless extended by the zoning administrator, the conditional use permit shall expire if it is not recorded within two years of approval.

B. Variance to the Pedestrian Oriented Overlay District standards.

Recommended motion: **Approve** the variance to the Pedestrian Oriented Overlay District standards to allow a building placement further than 8 feet from the front property line, subject to the following conditions:

1. The applicant shall remove the proposed vehicle turn-around and replace it with pedestrian amenity space and/or landscaped area.

C. Variance to the minimum interior side yard.

Recommended motion: **Approve** the variance to reduce the minimum interior side yard requirement along the alley from 13 feet to 12 feet.

D. Variance to the minimum drive aisle width.

Recommended motion: **Deny** the variance to reduce the minimum drive aisle dimensions for an onsite surface parking lot.

E. Site Plan Review.

Recommended motion: **Approve** the site plan review for a new five-story residential building with 144 dwelling units, subject to the following conditions:

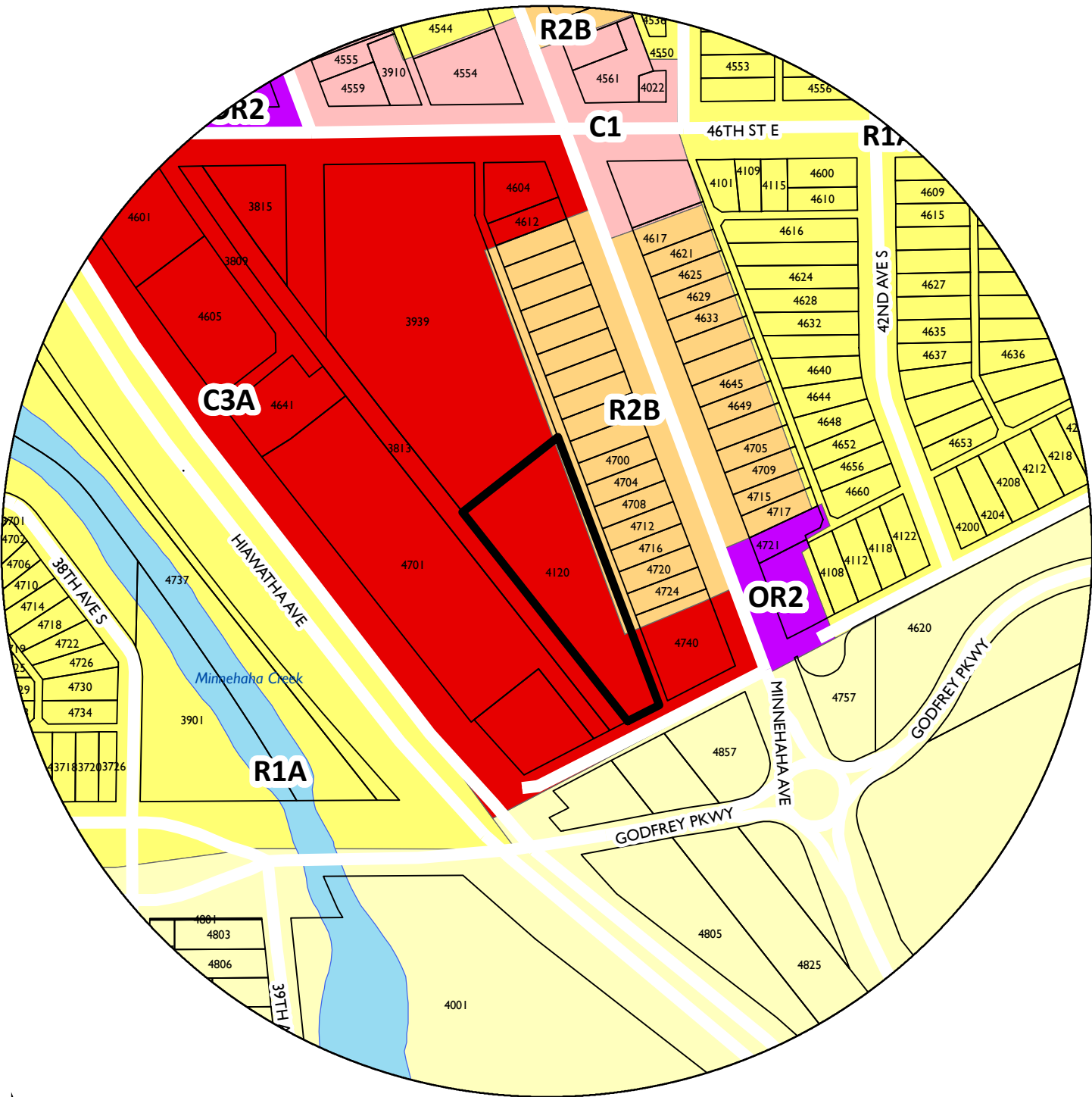
1. All site improvements shall be completed by November 16th, 2022, unless extended by the Zoning Administrator, or the permit may be revoked for non-compliance.
2. CPED staff shall review and approve the final site, elevation, landscaping, and lighting plans before building permits may be issued.
3. All signs shall comply with Chapter 543 of the zoning code. All signage requires a separate permit from CPED.
4. The applicant shall implement pedestrian-scaled lighting along the proposed shared use trail and along the west elevation walk-up units, consistent with the standards of chapter 530 and 535.
5. The applicant shall implement a clear and well-lit pedestrian pathway connecting the front entrance of the building to the public sidewalk that is separate from and in addition to the proposed shared-use trail.
6. The applicant shall modify their plans to show compliance with the minimum bicycle parking requirement of 72 long-term spaces.
7. The applicant shall modify the design of the proposed on-site surface parking lot to meet the parking area design and screening standards of chapters 541 and 530.
8. The vehicle turn-around between the building and Nawadaha Blvd shall be removed and replaced with amenities such as landscaping and pedestrian space.
9. All final site plan approvals subject to conditions of inclusionary housing shall be filed with the Office of the Hennepin County Recorder or Registrar of Titles and evidence of proper filing shall be submitted to the zoning administrator prior to the issuance of any building permits.

ATTACHMENTS

1. Written description and findings submitted by applicant
2. Survey
3. Site plan
4. Plans
5. Building elevations
6. Renderings
7. Shadow study
8. Photos
9. Public comments

NAME OF APPLICANT

WARD



PROPERTY ADDRESS
4120 Nawadaha Blvd

FILE NUMBER
PLANXXXXXX

LOWA PHASE II – MINNEAPOLIS

To: Peter Crandall
From: Ian Halker
Oppidan Investment Company/ KTJ 295, LLC
Date: October 13, 2020
Subject: 4120 Nawadaha Blvd, Minneapolis, Minnesota 55406

General Description of Project:

Lowa Phase II will be a five-story market rate apartment project with 8% of the units reserved for renters at 60% AMI. The project is a continuation of Lowa46, which was completed in 2019 (148 units). Phase II will consist of 144 units and a mix of units, ranging from alcoves to 2-bedrooms. The site of the location provides an excellent opportunity to enhance the connectivity of this city block to Minnehaha Park, which has been a priority of the overall development. The site was previously restricted from any meaningful development due to the electrical power lines that ran through the middle of the site, prohibiting any large-scale development. In March of this year, Oppidan Investment Company invested in the costs to relocate these power lines to see this project forward. In 2001, the city of Minneapolis along with the Longfellow Neighborhood had a Small Area Master Plan completed by Farr Associates which has served as a continual reference for the proposed project and for Phase I. The Small Area Study outlined that the southeast quadrant of the intersection of Hiawatha Avenue & East 46th Street, could support an estimated 450 housing units. Today, there are currently 148 housing units in Lowa46, and 166 units under construction within this immediate area. Phase II will continue to advance this objective by adding an additional 144 units to the area.

- Five- Story Apartment (100% Residential)
 - o 144 Units
 - 133 Market Rate Apartment Units (\$1,250-2,350)
 - 11 Affordable Apartment Units (60% AMI)
 - o 117 Parking Stalls
 - 98 Underground Parking Stalls
 - 19 Surface Level Parking Stalls

| CURRENT MIX IN CONCEPT... | | | | | | |
|---------------------------|---------|---------|---------|---------|---------|-------|
| Level | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 | Total |
| Alcove | 7 | 6 | 6 | 6 | 6 | 31 |
| 1-Bedroom | 14 | 16 | 16 | 16 | 15 | 77 |
| 2-Bedroom | 6 | 8 | 8 | 8 | 6 | 36 |
| | 27 | 30 | 30 | 30 | 27 | 144 |
| | 27 | 30 | 30 | 30 | 27 | 144 |

46th & Hiawatha Small Area Study – Project Benefit:

The Property and surrounding 12 acres of land uses have been studied extensively in City planning documents, starting in 2001 with 46th & Hiawatha Station Area Master Plan and again in 2013-2014 with, 46th & Hiawatha Transit Orientated Development Strategy. The full-build concept plans anticipated over 400 units of housing in a variety of product types. Key components consistent across all of the planning studies included the extension of Snelling Avenue as a public road,

converting the unused railroad tracks to a linear park, and introducing a mixed-use, grocery-anchored building as part of the first phase of redevelopment. Together, the master-planned concepts envision a dense, mixed-use town center, which is consistent with the Project. The neighborhood supplied a letter of support for the proposed Project during the neighborhood engagement process, affirming the support of the master-plan documents and the Project's vision.

The Project will result in substantial public benefit consistent with the policies of the City, including:

- The Project realizes the goals of 46th & Hiawatha Master Planning:
 - Construction of the 46th street bike trail for the Min-Hi Line Linear Park
 - Investment of consolidation of Xcel overhead transmission lines that prohibited any meaningful development of the parcel, unlocking buildable square footage for more density
 - Environmental clean-up from past industrial uses
 - Modern Stormwater treatment (zero exists today) as a project amenity
 - Provides the second development phase as envisioned in master planning documents
 - Enhanced connectivity of neighboring properties and Minnehaha Park
- Strong multi-modal connections and traffic demand management strategies will reduce vehicle trips and the project will also encourage the use of a walkable grocery option for future residents that will also reduce will reduce vehicle trips to non-neighborhood grocery stores.
- The Project creates over \$35 million in new property tax value.

Project Improvements from City and Neighborhood Feedback

Engagement meetings have been held over a 12-month timeframe that included several neighborhood meetings, multiple City, Public Works, Park and Recreation, and/or Watershed meetings, Minneapolis Committee of the Whole, and Minneapolis PDR review. Through the planning process the following changes have been incorporated into the submittal to be responsive to concerns raised by stakeholders:

- Modification of the underground parking ramp entrance. **Neighborhood, CPED & Public Works**
- Removal of surface parking on the south side of the property. **CPED**
- Adding landscape features to south hardscape for building entrance. **Neighborhood, CPED**
- Added rain garden, pods and landscaping along west building elevation. **Neighborhood, CPED**
- Reserving 8% of the unit mix for affordable rents. **Neighborhood, CPED**
- Increased bicycle parking counts and locations. **Neighborhood, CPED**
- Enhanced North Entrance into building and added connection points. **Neighborhood, CPED**
- Removed curb cut from alley to reduce vehicle traffic at the front building entrance. **Neighborhood, CPED & Public Works**
- Modified landscape plan to include all native, drought-tolerant plants to eliminate having to irrigate with city water. **Neighborhood**

Zoning & Overlay District:

Community Activity Center District (C3A): The C3A district provides for the mixed-use development of activity centers that combine destination retail and entertainment uses with high-density residential uses. The current proposed plans align with the intended framework of the zoning from our understanding.

Pedestrian Oriented Overlay District (PO): The PO district is established to preserve and encourage the pedestrian character of commercial areas and to promote street life and activity by regulating

building orientation and design and accessory parking facilities, and by prohibiting certain high impact and automobile-oriented uses.

Variances Requested:

It is understood that the Project will included two variances which we have received support from the Longfellow Neighborhood regarding.

Pedestrian Oriented Overall District standards to increase the maximum front yard setback of 8 feet from Nawadaha Boulevard.

The Project meets the findings below necessary for the City to grant a variance to allow for the first-floor building wall to be located more than eight (8) feet from the front lot line in the PO Overlay District. The irregular shape of the parcel combined with the overhead transmission line easements that exist with Xcel Energy prohibit practical construction of the buildings first floor to the lot line facing Nawadaha Boulevard.

- 1) Practical difficulties exist in complying with the ordinance because of circumstances unique to the property. The unique circumstances were not created by persons presently having an interest in the property and are not based on economic considerations alone.

Practical difficulties exist in complying with the ordinance because of circumstances unique to the Property. The Property is shaped irregularly and is hindered by overhead transmission line easements that exist along the western and eastern edges of the parcel. These easements restrict the feasibility to construct a building to the front yard setback of 8 feet effectively. The southern boundary of the parcel facing Nawadaha Boulevard converges to a narrow point, which physically limits the ability to construct a five-story building to meet this maximum setback.

- 2) The property owner or authorized applicant proposes to use the property in a reasonable manner that will be in keeping with the spirit and intent of the ordinance and the comprehensive plan.

The proposed setback from the property line or more than eight (8) feet is a reasonable use and is consistent with the intent of the ordinance and comprehensive plan. The increased setback due to the hindrances of the overhead powerline easements is enhanced by the additional of the increased connectivity of the design with pedestrian pathways that lead to the front entrance of the building. The added landscaping features allow for a gateway entrance that provides attractive connectivity to Nawadaha Boulevard and to Minnehaha Park.

- 3) The proposed variance will not alter the essential character of the locality or be injurious to the use or enjoyment of other property in the vicinity. If granted, the proposed variance will not be detrimental to the health, safety, or welfare of the general public or of those utilizing the property or nearby properties.

The proposed use of the Property will not alter the essential character of the locality or be injurious to the use or enjoyment of other property in the vicinity. In addition, granting of the variance will not be detrimental to the health, safety, or welfare of the general public or of those using the Property or nearby property. The proposed setback will encourage cross usage of the setback area by residents of the project, neighboring residents, and community members.

Variance to reduce minimum interior side yard along the east property line adjacent to the alley from 13 feet to 10 feet.

The Project meets the findings below for the City to grant a variance to reduce the minimum interior side yard along the alley on the east property line from 13 feet to 10 feet due to the minimal infringement that encroaches the 13 foot setback. The irregular shape of the parcel (triangular) combined with the overhead transmission lines cause a slight infringement of the 13-foot setback on the southern and northern corner faces of the east elevation. In total, the east elevation is approximately over 440 linear feet. The corners that infringe on this setback are equal to no more than 12% of the total linear footage of this elevation.

- 1) Practical difficulties exist in complying with the ordinance because of circumstances unique to the property. The unique circumstances were not created by persons presently having an interest in the property and are not based on economic considerations alone.

Practical difficulties exist in complying with the ordinance because of circumstances unique to the Property. The Property is shaped irregularly and is hindered by powerline easements that exist from Xcel Energy on both the west and east property lines. These easements narrow the buildable square footage as the site converges to the south. The building footprint is within the minimum distance of the powerlines on the western boundary of the parcel, which cause two corners of the building to infringe on the 13 foot side yard setback given the L-Shape of the building footprint.

- 2) The property owner or authorized applicant proposes to use the property in a reasonable manner that will be in keeping with the spirit and intent of the ordinance and the comprehensive plan.

The proposed reduction of the setback from the eastern side yard from 13 feet to 10 feet is a reasonable use and is consistent with the intent of the ordinance and the comprehensive plan. The buildings articulation along the east elevation, causing two corners of the building to infringe along the side yard setback breaks up the east elevation for more visually attractive design.

- 3) The proposed variance will not alter the essential character of the locality or be injurious to the use or enjoyment of other property in the vicinity. If granted, the proposed variance will not be detrimental to the health, safety, or welfare of the general public or of those utilizing the property or nearby properties.

The proposed use of the Property will not alter the essential character of the locality or be injurious to the use or enjoyment of other property in the vicinity. In addition, granting of the variance will not be detrimental to the health, safety, or welfare of the general public or of those using the Property or nearby property. The proposed setback reduction due to the infringement of these corners will enhance the aesthetics of the overall elevation for the Property and nearby properties.

CUP to Increase Building Height:

The applicant requests a Conditional Use Permit (CUP) to increase the height of the building from four (4) stories or fifty-six (56) feet to five (5) stories and 58 feet. The project meets the required findings as follows:

- 1) The establishment, maintenance or operation of the conditional use will not be detrimental to or endanger the public health, safety comfort or general welfare.

Construction of a multi-family building of the proposed height will not be detrimental to or endanger the public health, safety, comfort or general welfare, and granting the CUP will allow a development that will benefit the neighborhood. The project will continue the positive trend within the area of redeveloping land with a dense, multifamily use. The new construction will comply with all building and site development codes.

- 2) The conditional use will not be injurious to the use and enjoyment of other property in the vicinity and will not impede the normal and orderly development and improvement of surrounding property of uses permitted in the district.

The proposed height will not be injurious to the use and enjoyment of other property or impede development and improvement of the surrounding property. The height is constrained to 5 levels and footprint is limited due to site constraints such as the overhead transmission easement and the unique. Surface parking will be provided, but a majority of parking will be provided in the P1 level below grade minimizing the parking impact to the neighborhood.

- 3) Adequate utilities, access roads, drainage, necessary facilities or other measures, have been or will be provided.

Adequate utilities, access, drainage and other facilities will be provided. The development team will continue to work closely with Public Works, Code Plan Review, and CPED Planning staff to comply with City and other applicable requirements. Vehicular access will be restricted to the proposed curb cuts on Nawadaha. Access and trash unloading will be provided off the public alley east of the site. Permanent stormwater management will be provided via underground stormwater chambers to improve the runoff conditions from the property.

- 4) Adequate measures have been or will be taken to minimize traffic congestion in the public streets.

A Travel Demand Management Plan has been prepared and will require approval by Public Works. The Developer will make commitments in the TDMP that will promote use of alternative transportation by residents, employees and customers. Loading will occur on site in the service and loading area within the property. The parking garage will provide parking for the residential uses below grade and at the surface level.

- 5) The conditional use is consistent with the applicable policies of the comprehensive plan.

The Minneapolis Plan for Sustainable Growth designates the site for Mixed Use development, and as an Activity Center. The project and proposed height are consistent with the following policies and implementation steps from the comprehensive plan.

Land Use Policy 1.2: Ensure appropriate transitions between uses with different size, scale, and intensity.

Promote quality design in new development, as well as building orientation, scale, massing, buffering, and setbacks that are appropriate with the context of the surrounding area.

Land Use Policy 1.3: Ensure that development plans incorporate appropriate transportation access and facilities, particularly for bicycle, pedestrian, and transit.

Require safe, convenient, and direct pedestrian connections between principal building entrances and the public right-of-way in all new development and, where practical, in conjunction with renovation and expansion of existing buildings.

Ensure the provision of high-quality transit, bicycle, and pedestrian access to and within designated land use features.

Land Use Policy 1.8: Preserve the stability and diversity of the city's neighborhoods while allowing for increased density in order to attract and retain long-term residents and businesses.

1.8.1 Promote a range of housing types and residential densities, with highest density development concentrated in and along appropriate land use features.

Urban Design Policy 10.5: Support the development of multi-family residential dwellings of appropriate form and scale.

10.5.2 Medium-scale, multi-family residential development is more appropriate along Commercial Corridors, Activity Centers, Transit Station Areas and Growth Centers outside of Downtown Minneapolis.

Urban Design Policy 10.6: New multi-family development or renovation should be designed in terms of traditional urban building form with pedestrian scale design features at the street level.

Design buildings to fulfill light, privacy, and view requirements for the subject building as well as for adjacent properties by building within required setbacks.

Promote the preservation and enhancement of view corridors that focus attention on natural or built features, such as the Downtown skyline, landmark buildings, significant open spaces or bodies of water.

Provide appropriate physical transition and separation using green space, setbacks or orientation, stepped down height, or ornamental fencing to improve the compatibility between higher density and lower density residential uses.

Orient buildings and building entrances to the street with pedestrian amenities like wider sidewalks and green spaces.

Street-level building walls should include an adequate distribution of windows and architectural features in order to create visual interest at the pedestrian level.

10.6.1 Integrate transit facilities and bicycle parking amenities into the site design.

- 6) The conditional use shall in all other respects, conform to the applicable regulations of the district in which it is located.

Upon approval of the submitted applications, the project will conform to the applicable regulations of the C3A Zoning District.



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Additional factors to be considered when determining the maximum height per §548.110:

Access to light and air of surrounding properties.

Public right-of-way separates the proposed block from surrounding properties on three sides and is adjacent to an above ground grocery parking lot on the north side. Allowing the requested increase in height will not impede access to light and air for the surrounding properties.

Shadowing of residential properties, significant public spaces, or existing solar energy systems.

A shadow study has been submitted that shows the degree of shadowing of other residential properties by the project.

The scale and character of surrounding uses.

The scale and character of the proposed building is compatible with surrounding development and consistent with the overall guidance in the Minneapolis Plan for Sustainable Growth. The project enhances the character of other surrounding uses by replacing an existing unused (formerly industrial) land. The scale of the development while larger than some of the existing context, is consistent with the height commercial uses of other Activity Centers within the City.

Preservation of views of landmark buildings, significant open spaces or water bodies.

The project will not block views of landmark buildings, significant open spaces or water bodies.

Phasing & Construction Schedule:

The proposed construction phasing schedule is as follows:

1. Sitework/ Excavation to begin in Q2 of 2021. This will take 60-120 days.
2. Footings/ Foundation to being in conjunction with above.
3. Vertical Construction to start in Q2 of 2021. This will take 12-14 months.
4. Certificate of Occupancy: Q2/3 of 2022.

Type of Construction:

Type II-B Construction; Concrete underground parking lot with five stories of wood framed construction above.

Occupancy Classification:

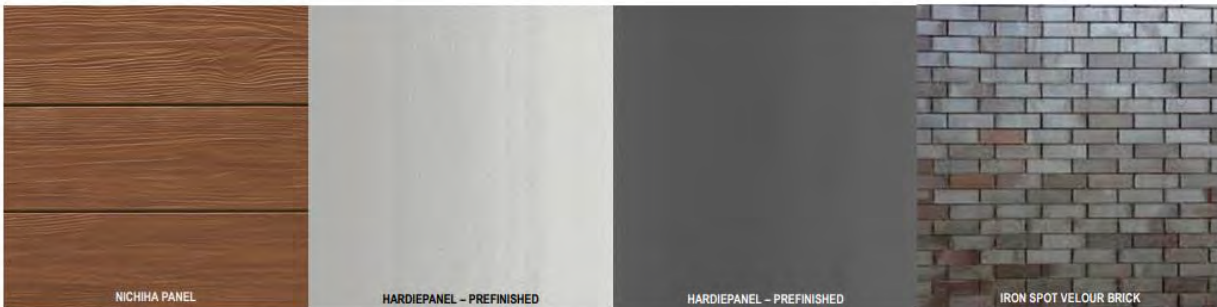
R-2 Occupancy; Residential occupancies containing sleeping units of more than two dwelling units where the occupants are primarily permanent in nature, including apartments.

Exterior Finishes:

The exterior façade of the building will consist of a combination of materials; Metal Panels, Hardipanel field painted and prefinished, Glass, as well as an Iron Spot Velour Brick.



PROPOSED EXTERIOR MATERIAL PALETTE - PHASE 2



EXTERIOR MATERIAL PALETTE - PHASE 1

We appreciate your time in advance and thank you for the thorough review of these site plans. Please contact me with any questions regarding the responses.

Sincerely,
Oppidan Investment Company



Ian Halker
Vice President, Development
Oppidan Investment Company
400 Water Street, Suite 200
Excelsior, MN 55331

| ISSUE # | DATE | DESCRIPTION |
|---------|----------|--------------|
| 1 | 08/07/20 | PDR SUBMITAL |
| 2 | 10/09/20 | LUA SUBMITAL |

NOT FOR
CONSTRUCTION

| | |
|-------------------|---------|
| DRAWN BY | BPG |
| CHECKED BY | BRJ |
| COMMISSION NUMBER | 2272.02 |

SITE DEVELOPMENT PLANS FOR

PHASE II MULTIFAMILY RESIDENTIAL

SECTION 18, TOWNSHIP 28 NORTH, RANGE 23 WEST
MINNEAPOLIS, HENNEPIN COUNTY, MN

PROJECT TEAM:

ENGINEER
KIMLEY-HORN AND ASSOCIATES, INC.

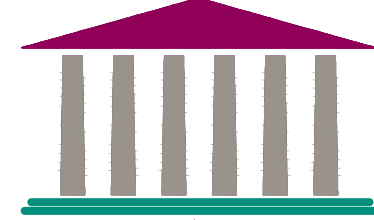
Kimley»Horn

PREPARED BY: BENJAMIN R. JOHNSON
767 EUSTIS STREET, SUITE 100
ST. PAUL, MN 55114
TELEPHONE (651) 645-4197

LANDSCAPE ARCHITECT
767 EUSTIS ST, SUITE 100
ST. PAUL, MN 55114
TELEPHONE: (651) 645-4197
CONTACT: CHUCK STEWART

GEOTECHNICAL ENGINEER
NORTHERN TECHNOLOGIES, LLC
6160 CARMEN AVENUE EAST,
INVER GROVE HEIGHTS, MN 55076
TELEPHONE: (651) 389-4191
CONTACT: DEBRA A. SCHROEDER

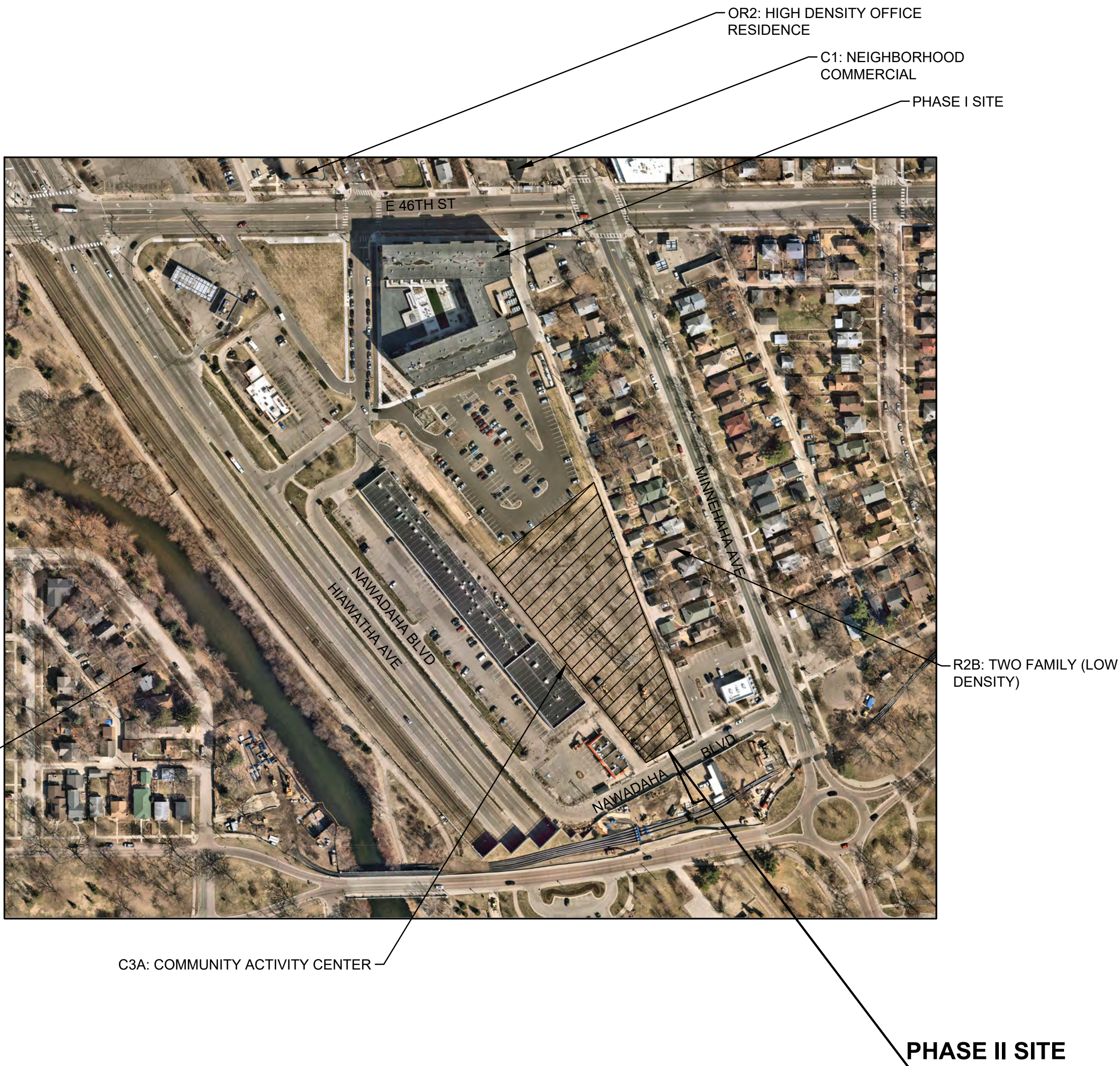
OWNER / DEVELOPER
OPPIDAN INVESTMENT COMPANY



400 WATER STREET, SUITE 200
EXCELSIOR, MN 55331
TELEPHONE: 952-294-1259
CONTACT: IAN HALKER

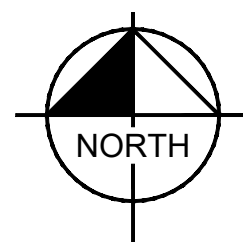
SURVEYOR
EGAN, FIELD & NOWAK, INC
1229 TYLER STREET NE, SUITE 100
TELEPHONE: (612) 466-3300
FAX: (612) 466-3383
CONTACT: ERIC ROESER

ARCHITECT
BKV GROUP
222 NORTH 2ND STREET, SUITE 101,
MINNEAPOLIS, MN 55401
TELEPHONE: 612-339-3752
FAX: 612-339-6212
CONTACT:MICHAEL J. KRYCH



| DRAWING INDEX | |
|---------------|---|
| SHEET NO. | SHEET TITLE |
| C000 | COVER SHEET |
| C001 | ALTA NSPS LAND TITLE SURVEY |
| C100 | GENERAL NOTES |
| C200 | DEMO PLAN |
| C300 | EROSION AND SEDIMENT CONTROL PLAN - PHASE 1 |
| C301 | EROSION AND SEDIMENT CONTROL PLAN - PHASE 2 |
| C400 | OVERALL SITE PLAN |
| C401 | SITE PLAN |
| C402 | TRAIL SITE PLAN |
| C500 | GRADING PLAN |
| C501 | STORMWATER MANAGEMENT PLAN |
| C600 | UTILITY PLAN |
| C700 | CIVIL DETAILS |
| C701 | CIVIL DETAILS |
| C702 | CIVIL DETAILS |
| L100 | LANDSCAPE PLAN |
| L101 | LANDSCAPE DETAILS |

VICINITY
N.T.S.



NOTES:

- CONTRACTOR SHALL CONFIRM THAT THE EXISTING CONDITIONS FOR THE SITE MATCH WHAT IS SHOWN ON THE DRAWINGS INCLUDED PRIOR TO CONSTRUCTION.
- IF REPRODUCED, THE SCALES SHOWN ON THESE PLANS ARE BASED ON A 30X42 SHEET.
- ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICES COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICES.
- ALL GENERAL CONTRACTOR WORK TO BE COMPLETED (EARTHWORK, FINAL UTILITIES, AND FINAL GRADING) BY THE MILESTONE DATE IN PROJECT DOCUMENTS.

BENCHMARKS

SITE BENCHMARKS:
(LOCATIONS SHOWN ON SURVEY)

SBM #1 TOP NUT OF HYDRANT LOCATED IN NW QUADRANT OF
INTERSECTION OF 46TH ST & SNELLING AVE.
ELEVATION=833.50

SBM #2 TOP NUT OF HYDRANT LOCATED SOUTHERLY OF
NAWADABA BOULEVARD SW OF THE SURVEYED PROPERTY.
ELEVATION=824.71



Know what's below.
Call before you dig.

K:\TWC_LDEV\OPD\IAN\6TH AND HAWATHA - MINNEAPOLIS, MN - PH II MULTIFAMILY3 DESIGN\CAD\PLANS\SHEETS\CI-GENERAL NOTES.DWG
10/8/2020 4:22:04 PM

GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR AND SUBCONTRACTORS SHALL OBTAIN A COPY OF THE MN DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" (LATEST EDITION) AND BECOME FAMILIAR WITH THE CONTENTS PRIOR TO COMMENCING WORK, AND, UNLESS OTHERWISE NOTED, ALL WORK SHALL CONFORM AS APPLICABLE TO THESE STANDARDS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL AND LABOR TO CONSTRUCT THE FACILITY AS SHOWN AND DESCRIBED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE APPROPRIATE APPROVING AUTHORITIES, SPECIFICATIONS AND REQUIREMENTS. CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS UNLESS OTHERWISE INDICATED, REMOVING TREES, STUMPS, ROOTS, MUCK, EXISTING PAVEMENT AND ALL OTHER DELETERIOUS MATERIAL.
3. THE EXISTING SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS QUALITY LEVEL "D" UNLESS OTHERWISE NOTED. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CIACSE 3802, ENTITLED STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF SUBSURFACE QUALITY DATA BY THE FPA. EXISTING UTILITIES SHOWN ARE LOCATED ACCORDING TO THE INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME OF THE TOPOGRAPHIC SURVEY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER. GUARANTEE IS NOT MADE THAT ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN OR THAT THE LOCATION OF THOSE SHOWN ARE ENTIRELY ACCURATE. FINDING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE DONE BEFORE COMMENCING ANY WORK IN THE VICINITY. FURTHERMORE, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE OWNER OR ENGINEER WILL ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES, NOR FOR TEMPORARY BRACING AND SHORING OF SAME. IF IT IS NECESSARY TO SHORE, BRACE, SWING OR RELOCATE A UTILITY, THE UTILITY COMPANY OR DEPARTMENT AFFECTED SHALL BE CONTACTED AND THEIR PERMISSION OBTAINED REGARDING THE METHOD TO USE FOR SUCH WORK.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE BURIED OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE 48 HOURS MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED CONSTRUCTION PERMITS AND BONDS IF REQUIRED PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES ONE COPY OF THE CONSTRUCTION DOCUMENTS INCLUDING PLANS, SPECIFICATIONS, GEOTECHNICAL REPORT AND SPECIAL CONDITIONS AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.
7. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND NOTIFICATION TO THE ENGINEER.
8. ALL COPIES OF COMPACTION, CONCRETE AND OTHER REQUIRED TEST RESULTS ARE TO BE SENT TO THE OWNER DIRECTLY FROM THE TESTING AGENCY.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING AND MAINTAINING AS-BUILT INFORMATION WHICH SHALL BE RECORDED AS CONSTRUCTION PROGRESSES OR AT THE COMPLETION OF APPROPRIATE CONSTRUCTION INTERVALS AND SHALL BE RESPONSIBLE FOR PROVIDING AS-BUILT DRAWINGS TO THE OWNER FOR THE PURPOSE OF CERTIFICATION TO JURISDICTIONAL AGENCIES AS REQUIRED. ALL AS-BUILT DATA SHALL BE COLLECTED BY A STATE OF MN PROFESSIONAL LAND SURVEYOR WHOSE SERVICES ARE ENGAGED BY THE CONTRACTOR.
10. ANY WELLS DISCOVERED ON SITE THAT WILL HAVE NO USE MUST BE PLUGGED BY A LICENSED WELL DRILLING CONTRACTOR IN A MANNER APPROVED BY ALL JURISDICTIONAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY WELL ABANDONMENT PERMITS REQUIRED.
11. ANY WELL DISCOVERED DURING EARTH MOVING OR EXCAVATION SHALL BE REPORTED TO THE APPROPRIATE JURISDICTIONAL AGENCIES WITHIN 24 HOURS AFTER DISCOVERY IS MADE.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK THAT WOULD BE AFFECTED. FAILURE TO NOTIFY OWNER OF AN IDENTIFIABLE CONFLICT PRIOR TO PROCEEDING WITH INSTALLATION RELIEVES OWNER OF ANY OBLIGATION TO PAY FOR A RELATED CHANGE ORDER.
13. SHOULD CONTRACTOR ENCOUNTER ANY DEBRIS LADEN SOIL, STRUCTURES NOT IDENTIFIED IN THE DOCUMENTS, OR OTHER SOURCE OF POTENTIAL CONTAMINATION, THEY SHALL IMMEDIATELY CONTACT THE ENGINEER AND OWNER.

EROSION CONTROL MAINTENANCE

ALL MEASURES STATED ON THE EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULL FUNCTIONAL CONDITION AS REQUIRED BY ALL JURISDICTIONS UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A CERTIFIED PERSON AT LEAST ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A 0.5" RAINFALL EVENT, AND CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR DETERIORATION.

1. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED AND RESEEDED AS NEEDED. FOR MAINTENANCE REQUIREMENTS REFER TO THE STANDARD SPECIFICATIONS.
2. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD THE HEIGHT OF THE SILT FENCE.
3. THE CONSTRUCTION ENTRANCE(S) SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
4. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.
5. ALL MAINTENANCE OPERATIONS SHALL BE DONE IN A TIMELY MANNER BUT IN NO CASE LATER THAN 2 CALENDAR DAYS FOLLOWING THE INSPECTION.

TYPICAL OWNER/ENGINEER OBSERVATIONS

CONTRACTOR SHALL NOTIFY OWNER AND/OR ENGINEER 48 HOURS IN ADVANCE OF THE FOLLOWING ACTIVITIES:

- PRE-CONSTRUCTION MEETING, SUBGRADE PREPARATION, BASE INSTALLATION, ASPHALT INSTALLATION, UNDERGROUND PIPING AND UTILITIES INSTALLATION, INSTALLATION OF STRUCTURES, CHECK VALVES, HYDRANTS, METERS, ETC., SIDEWALK INSTALLATION, CONNECTIONS TO WATER AND SEWER MAINS, TESTS OF UTILITIES

EROSION CONTROL NOTES

1. THE STORM WATER POLLUTION PREVENTION PLAN ("SWPPP") IS COMPRISED OF THE EROSION CONTROL PLAN, THE STANDARD DETAILS, THE PLAN NARRATIVE, ATTACHMENTS INCLUDED IN THE SPECIFICATIONS OF THE SWPPP, PLUS THE PERMIT AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS.
2. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN AND THE STATE OF MN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.
3. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY THE PERMITTING AGENCY OR OWNER.
4. SITE ENTRY AND EXIT LOCATIONS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ON A PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY, WHEN WASHING IS REQUIRED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN. ALL FINES IMPOSED FOR DISCHARGING SEDIMENT ONTO PUBLIC AREAS SHALL BE PAID BY THE CONTRACTOR.
5. TEMPORARY SEEDING OR OTHER APPROVED METHODS OF STABILIZATION SHALL BE INITIATED WITHIN 7 DAYS OF THE LAST DISTURBANCE ON ANY AREA OF THE SITE.
6. THE CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.
7. CONTRACTOR SHALL DENOTE ON PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
8. ALL WASH WATER (CONCRETE, TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.
9. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL ON SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
11. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
12. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THE PLAN SHALL BE INITIATED AS SOON AS IS PRACTICABLE.
13. ALL STAGING AREAS, STOCKPILES, SPOILS, ETC. SHALL BE LOCATED SUCH THAT THEY WILL NOT ADVERSELY AFFECT STORM WATER QUALITY OTHERWISE, COVERING OR ENCLOSING THESE AREAS WITH SOME PROTECTIVE MEASURE WILL BE NECESSARY.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING ANY EROSION CONTROL DEVICE WHICH THEY DISTURB. EACH CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DEFICIENCIES IN THE ESTABLISHED EROSION CONTROL MEASURES THAT MAY LEAD TO UNAUTHORIZED DISCHARGE OR STORM WATER POLLUTION, SEDIMENTATION, OR OTHER POLLUTANTS. UNAUTHORIZED POLLUTANTS INCLUDE (BUT ARE NOT LIMITED TO) EXCESS CONCRETE DUMPING OR CONCRETE RESIDUE, PAINTS, SOLVENTS, GREASES, FUEL AND LUBRICANT OIL, PESTICIDES, AND ANY SOLID WASTE MATERIALS.
15. EROSION CONTROL DEVICES SHOWN ON THESE PLANS SHALL BE INSTALLED PRIOR TO THE START OF LAND-DISTURBING ACTIVITIES ON THE PROJECT.
16. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THIS PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER AND THE CITY OF MINNEAPOLIS ENGINEERING DIVISION.
17. IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT, THE PLAN WILL HAVE TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE. ANY REVISIONS TO THE EROSION CONTROL PLAN MADE BY THE CONTRACTOR MUST BE APPROVED BY THE ENGINEER.

PAVING AND STRIPING NOTES

1. ALL PAVING, CONSTRUCTION, MATERIALS, AND WORKMANSHIP WITHIN JURISDICTION'S RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH LOCAL OR COUNTY SPECIFICATIONS AND STANDARDS (LATEST EDITION) OR MNDOT SPECIFICATIONS AND STANDARDS (LATEST EDITION) IF NOT COVERED BY LOCAL OR COUNTY REGULATIONS.
2. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AND CITY STANDARDS.
3. CONTRACTOR SHALL FURNISH ALL PAVEMENT MARKINGS FOR FIRE LANES, ROADWAY LANES, PARKING STALLS, ACCESSIBLE PARKING SYMBOLS, ACCESS AISLES, STOP BARS AND SIGNS, AND MISCELLANEOUS STRIPING WITHIN THE PARKING LOT AS SHOWN ON THE PLANS.
4. ALL EXPANSION JOINTS SHALL EXTEND THROUGH THE CURB.
5. THE MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS SHALL BE 2 FEET.
6. ALL JOINTS, INCLUDING EXPANSION JOINTS WITH REMOVABLE TACK STRIPS, SHALL BE SEALED WITH JOINT SEALANT.
7. THE MATERIALS AND PROPERTIES OF ALL CONCRETE SHALL MEET THE APPLICABLE REQUIREMENTS IN THE A.C.I. (AMERICAN CONCRETE INSTITUTE) MANUAL OF CONCRETE PRACTICE.
8. CONTRACTOR SHALL APPLY A SECOND COATING OVER ALL PAVEMENT MARKINGS PRIOR TO ACCEPTANCE BY OWNER FOLLOWED BY A COAT OF GLASS BEADS AS APPLICABLE PER THE PROJECT DOCUMENTS.
9. ANY EXISTING PAVEMENT, CURBS AND/OR SIDEWALKS DAMAGED OR REMOVED WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE TO THE SATISFACTION OF THE ENGINEER AND OWNER.
10. BEFORE PLACING PAVEMENT, CONTRACTOR SHALL VERIFY SUITABLE ACCESSIBLE ROUTES (PER A.D.A.) GRADING FOR ALL SIDEWALKS AND ACCESSIBLE ROUTES INCLUDING CROSSING DRIVEWAYS SHALL CONFORM TO CURRENT ADA STATE/NATIONAL STANDARDS. IN NO CASE SHALL ACCESSIBLE RAMP SLOPES EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWALK CROSS SLOPES EXCEED 2%, IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPES EXCEED 5%, IN NO CASE SHALL ACCESSIBLE PARKING STALLS OR AISLES EXCEED 2% (1.5% TARGET) IN ALL DIRECTIONS. SIDEWALK ACCESS TO EXTERNAL BUILDING DOORS AND GATES SHALL BE ADA COMPLIANT. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ADA CRITERIA CANNOT BE MET IN ANY LOCATION PRIOR TO PAVING. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR A D.A COMPLIANCE ISSUES.
11. MAXIMUM JOINT SPACING IS TWICE THE DEPTH OF THE CONCRETE PAVEMENT IN FEET.

GRADING AND DRAINAGE NOTES

1. GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE START OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
2. THE CONTRACTOR SHALL GRADE THE SITE TO THE ELEVATIONS INDICATED AND SHALL ADJUST BMP'S AS NECESSARY AND REGRADE WASHOUTS WHERE THEY OCCUR AFTER EVERY RAINFALL UNTIL A GRASS STAND IS WELL ESTABLISHED OR ADEQUATE STABILIZATION OCCURS.
3. CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS SO THAT SURFACE RUNOFF WILL DRAIN BY GRAVITY TO NEW OR EXISTING DRAINAGE OUTLETS. CONTRACTOR SHALL ENSURE NO PONDING OCCURS IN PAVED AREAS AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT OR UTILITIES.
4. CONTRACTOR SHALL PROTECT ALL MANHOLE COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES, AND TELEPHONE BOXES THAT ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION. EXISTING CASTINGS AND STRUCTURES TO REMAIN SHALL BE ADJUSTED TO MATCH THE PROPOSED FINISHED GRADES.
5. BACKFILL FOR UTILITY LINES SHALL BE PLACED PER DETAILS, STANDARDS, AND SPECIFICATIONS SO THAT THE UTILITY WILL BE STABLE WHERE UTILITY LINES CROSS THE PARKING LOT. THE TOP 6 INCHES SHALL BE COMPACTED. SIMILARLY TO THE REMAINDER OF THE LOT, UTILITY DITCHES SHALL BE VISUALLY INSPECTED DURING THE EXCAVATION PROCESS TO ENSURE THAT UNDESIRABLE FILL IS NOT USED.
6. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF 4" OF TOPSOIL AT COMPLETION OF WORK. ALL UNPAVED AREAS IN EXISTING RIGHTS-OF-WAY DISTURBED BY CONSTRUCTION SHALL BE REGRADED AND SOODED.
7. AFTER PLACEMENT OF SUBGRADE AND PRIOR TO PLACEMENT OF PAVEMENT, CONTRACTOR SHALL TEST AND OBSERVE PAVEMENT AREAS FOR EVIDENCE OF PONDING. ALL AREAS SHALL ADEQUATELY DRAIN TOWARDS THE INTENDED STRUCTURE TO CONVEY STORM RUNOFF. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER AND ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED.
8. WHERE EXISTING PAVEMENT IS INDICATED TO BE REMOVED AND REPLACED, THE CONTRACTOR SHALL SAW OUT FULL DEPTH FOR A SMOOTH AND STRAIGHT JOINT AND REPLACE THE PAVEMENT WITH THE SAME TYPE AND DEPTH OF MATERIAL AS EXISTING OR AS INDICATED.
9. THE CONTRACTOR SHALL INSTALL PROTECTION OVER ALL DRAINAGE STRUCTURES FOR THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF THE PROJECT BY THE OWNER. ALL DRAINAGE STRUCTURES SHALL BE CLEANED OF DEBRIS AS REQUIRED DURING AND AT THE END OF CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE FLOWS.
10. IF DEWATERING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ANY APPLICABLE REQUIRED PERMITS. THE CONTRACTOR IS TO COORDINATE WITH THE OWNER AND THE DESIGN ENGINEER PRIOR TO ANY EXCAVATION.
11. FIELD DENSITY TESTS SHALL BE TAKEN AT INTERVALS IN ACCORDANCE WITH THE LOCAL JURISDICTIONAL AGENCY OR TO MNDOT STANDARDS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
12. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED AS PER PLANS. THE AREAS SHALL THEN BE SOODED OR SEEDED AS SPECIFIED IN THE PLANS. FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL EARTHEN AREAS WILL BE SOODED OR SEEDED AND MULCHED AS SHOWN ON THE LANDSCAPING PLAN.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
14. SOO, WHERE CALLED FOR, MUST BE INSTALLED AND MAINTAINED ON EXPOSED SLOPES WITHIN 48 HOURS OF COMPLETING FINAL GRADING, AND AT ANY OTHER TIME AS NECESSARY, TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGES.
15. THE CONTRACTOR SHALL ENSURE THAT LANDSCAPE ISLAND PLANTING AREAS AND OTHER PLANTING AREAS ARE NOT COMPACTED AND DO NOT CONTAIN ROAD BASE MATERIALS. THE CONTRACTOR SHALL ALSO EXCAVATE AND REMOVE ALL UNDESIRABLE MATERIAL FROM ALL AREAS ON THE SITE TO BE PLANTED AND PROPERLY DISPOSED OF IN A LEGAL MANNER.
16. THE CONTRACTOR SHALL INSTALL ALL UNDERGROUND STORM WATER PIPING PER MANUFACTURER'S RECOMMENDATIONS AND MNDOT SPECIFICATION.
17. ALL CONCRETE/ASPHALT SHALL BE INSTALLED PER GEOTECH REPORT, CITY OF MINNEAPOLIS AND MNDOT SPECIFICATIONS.
18. SPOT ELEVATIONS ARE TO FLOWLINE OF CURB UNLESS OTHERWISE NOTED.
19. LIMITS OF CONSTRUCTION ARE TO THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED ON THE PLAN.
20. IMMEDIATELY REPORT TO THE OWNER ANY DISCREPANCIES FOUND BETWEEN ACTUAL FIELD CONDITIONS AND CONSTRUCTION DOCUMENTS.
21. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING EXISTING UTILITIES, AND SHALL REPAIR ALL DAMAGE TO EXISTING UTILITIES THAT OCCUR DURING CONSTRUCTION WITHOUT COMPENSATION.
22. BLEND NEW EARTH/WORK SMOOTHLY TO TRANSITION BACK TO EXISTING GRADE.
23. ALL PROPOSED GRADES ONSITE SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE INDICATED ON THE PLANS. ANY SLOPES STEEPER THAN 4:1 REQUIRE EROSION AND SEDIMENT CONTROL BLANKET.
24. ADHERE TO ALL TERMS AND CONDITIONS AS NECESSARY IN THE GENERAL N.P.D.E.S. PERMIT AND STORMWATER POLLUTION PREVENTION PLAN FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
25. ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
26. CONTRACTOR SHALL ENSURE MINIMUM GRADES ARE MET WITHIN PAVED AREAS, 1.2% FOR ASPHALT PAVING AND 0.6% FOR CONCRETE PAVING.

3RD PARTY TEST REPORTS REQ'D

TEST REPORTS REQUIRED FOR CLOSE OUT INCLUDE, BUT ARE NOT LIMITED TO:

- DENSITY TEST REPORTS
- BACTERIOLOGICAL TESTS OF WATER SYSTEM
- PRESSURE TEST OF WATER/SEWER
- LEAK TESTS ON SEWER SYSTEM AND GREASE TRAPS
- ANY OTHER TESTING REQUIRED BY THE AGENCY/MUNICIPALITY

REFER TO GEOTECHNICAL REPORT NO. 19 MSP09361.000
NORTHERN TECHNOLOGIES, LLC
LOWA 46 APARTMENTS
DATED: JANUARY 16, 2020

WATER STORM SEWER & SANITARY SEWER NOTES

1. THE CONTRACTOR SHALL CONSTRUCT GRAVITY SEWER LATERALS, MANHOLES, GRAVITY SEWER LINES, AND DOMESTIC WATER AND FIRE PROTECTION SYSTEM AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL FURNISH ALL NECESSARY MATERIALS, EQUIPMENT, MACHINERY, TOOLS, MEANS OF TRANSPORTATION, AND LABOR NECESSARY TO COMPLETE THE WORK IN FULL AND COMPLETE ACCORDANCE WITH THE SHOWN, DESCRIBED AND REASONABLY INTENDED REQUIREMENTS OF THE CONTRACT DOCUMENTS AND JURISDICTIONAL AGENCY REQUIREMENTS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
2. ALL EXISTING UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS FOR UTILITY LOCATION AND COORDINATION IN ACCORDANCE WITH THE NOTES CONTAINED IN THE GENERAL CONSTRUCTION SECTION OF THIS SHEET.
3. THE CONTRACTOR SHALL RESTORE ALL DISTURBED VEGETATION IN KIND, UNLESS SHOWN OTHERWISE.
4. DEFLECTION OF PIPE JOINTS AND CURVATURE OF PIPE SHALL NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS. SECURELY CLOSE ALL OPEN ENDS OF PIPE AND FITTINGS WITH A WATERTIGHT PLUG WHEN WORK IS NOT IN PROGRESS. THE INTERIOR OF ALL PIPES SHALL BE CLEAN AND JOINT SURFACES WIRED CLEAN AND DRY AFTER THE PIPE HAS BEEN LOWERED INTO THE TRENCH. VALVES SHALL BE PLUMB AND LOCATED ACCORDING TO THE PLANS.
5. ALL PIPE AND FITTINGS SHALL BE CAREFULLY STORED FOLLOWING MANUFACTURER'S RECOMMENDATIONS. CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE COATING OR LINING IN ANY D.I. PIPE FITTINGS. ANY PIPE OR FITTING WHICH IS DAMAGED OR WHICH HAS FLAWS OR IMPERFECTIONS WHICH, IN THE OPINION OF THE ENGINEER OR OWNER, RENDERS IT UNFIT FOR USE, SHALL NOT BE USED. ANY PIPE NOT SATISFACTORY FOR USE SHALL BE CLEARLY MARKED AND IMMEDIATELY REMOVED FROM THE JOB SITE, AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
6. WATER FOR FIRE FIGHTING SHALL BE MADE AVAILABLE FOR USE BY THE CONTRACTOR PRIOR TO COMBUSTIBLES BEING BROUGHT ON SITE.
7. ALL UTILITY AND STORM DRAIN TRENCHES LOCATED UNDER AREAS TO RECEIVE PAVING SHALL BE COMPLETELY BACK-FILLED IN ACCORDANCE WITH THE GOVERNING JURISDICTIONAL AGENCY SPECIFICATIONS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
8. UNDERGROUND LINES SHALL BE SURVEYED BY A STATE OF MN PROFESSIONAL LAND SURVEYOR PRIOR TO BACK FILLING.
9. CONTRACTOR SHALL PERFORM, AT HIS OWN EXPENSE, ANY AND ALL TESTS REQUIRED BY THE SPECIFICATIONS AND/OR ANY AGENCY HAVING JURISDICTION. THESE TESTS MAY INCLUDE, BUT MAY NOT BE LIMITED TO, INFILTRATION AND EXFILTRATION, TELEVISION INSPECTION AND A MANHOLE TEST ON GRAVITY SEWER. A COPY OF THE TEST RESULTS SHALL BE PROVIDED TO THE UTILITY PROVIDER, OWNER AND JURISDICTIONAL AGENCY AS REQUIRED.
10. CONTRACTOR SHALL PROVIDE FOR A MINIMUM HORIZONTAL CLEARANCE OF 10' AND A VERTICAL CLEARANCE OF 18" BETWEEN WATER AND SANITARY SEWER MANHOLES AND LINES.
11. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
12. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT UNLESS OTHERWISE STATED BY CITY AND STATE DESIGN STANDARDS AND SPECIFICATIONS.
13. UNLESS OTHERWISE STATED IN CITY AND STATE DESIGN STANDARDS AND SPECIFICATIONS, ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER". EXISTING CASTINGS AND STRUCTURES WITHIN PROJECT LIMITS SHALL BE ADJUSTED TO MEET THESE CONDITIONS AND THE PROPOSED FINISHED GRADE.
14. TOPOGRAPHIC INFORMATION IS TAKEN FROM A TOPOGRAPHIC SURVEY BY LAND SURVEYORS. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.
15. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
16. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR FROM INVERT IN TO INVERT OUT.
17. ROOF DRAINS SHALL BE CONNECTED TO STORM SEWER BY PREFABRICATED WYES OR AT STORM STRUCTURES. ROOF DRAINS AND TRUCK WELL DRAIN SHALL RUN AT A MINIMUM 1% SLOPE, UNLESS NOTED OTHERWISE, AND TIE IN AT THE CENTERLINE OF THE STORM MAIN.
18. ALL ROOF AND SANITARY SEWER DRAINS SHALL BE INSULATED IF 7" OF COVER CANNOT BE PROVIDED.
19. THE CONTRACTOR SHALL PROTECT EXISTING UNDERGROUND UTILITIES AND APPURTENANCES THAT ARE TO REMAIN FROM DAMAGE DURING CONSTRUCTION OPERATIONS.
20. THE LOCATION OF EXISTING UTILITIES, STORM DRAINAGE STRUCTURES AND OTHER ABOVE AND BELOW-GRADE IMPROVEMENTS ARE APPROXIMATE AS SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION, SIZE AND INVERT ELEVATIONS OF EACH PRIOR TO THE START OF CONSTRUCTION.
21. A MINIMUM OF 5' SEPARATION IS REQUIRED BETWEEN UTILITIES AND TREES UNLESS A ROOT BARRIER IS UTILIZED.
22. GAS, PHONE AND ELECTRIC SERVICES SHOWN FOR INFORMATIONAL PURPOSES ONLY. DRY UTILITY COMPANIES MAY ALTER THE DESIGN LAYOUT DURING THEIR REVIEW. CONTRACTOR TO COORDINATE FINAL DESIGN AND INSTALLATION WITH UTILITY COMPANIES.
23. COORDINATE UTILITY INSTALLATION WITH IRRIGATION DESIGN AND INSTALLATION.
24. ALL DIMENSIONS ARE TO FLOW LINE OF CURB UNLESS OTHERWISE NOTED. PERIMETER WALL DIMENSIONS ARE TO INSIDE WALL FACE. REFERENCE ARCHITECTURAL PLANS FOR EXACT WALL WIDTH AND SPECIFICATIONS.
25. REFERENCE ARCHITECTURAL PLANS (BY OTHERS) FOR EXACT BUILDING DIMENSIONS, AND MATERIALS SPECIFICATIONS.
26. REFERENCE M.E.P. PLANS (BY OTHERS) FOR MECHANICAL EQUIPMENT DIMENSIONS AND SPECIFICATIONS.
27. CONTRACTOR SHALL REFERENCE STRUCTURAL PLANS (BY OTHERS) FOR MECHANICAL EQUIPMENT DIMENSIONS AND PAD PREPARATION SPECIFICATIONS.
28. CONTRACTOR SHALL REFERENCE M.E.P. PLANS (BY OTHERS) FOR LIGHT POLE WIRING.

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PROJECT TITLE

3939 E 46TH
STREET - PHASE II
RESIDENTIAL

| ISSUE # | DATE | DESCRIPTION |
|---------|----------|--------------|
| 1 | 08/07/20 | PDR SUBMITAL |
| 2 | 10/09/20 | LUA SUBMITAL |

CERTIFICATION

NOT FOR
CONSTRUCTION

| | |
|-------------------|---------|
| DRAWN BY | BPG |
| CHECKED BY | BRJ |
| COMMISSION NUMBER | 2272.02 |

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

C100

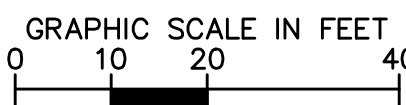
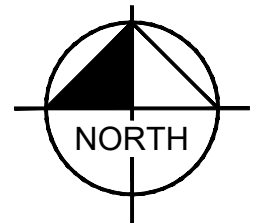
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DEMOLITION PLAN NOTES

- THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL (IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES) ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, PARKING, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC. SUCH THAT THE IMPROVEMENTS ON THE PLANS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL, AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL, PER THE PROJECT DOCUMENTS.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL. CONTRACTOR SHALL PROVIDE COPIES OF THE PERMIT AND RECEIPTS OF DISPOSAL OF MATERIALS TO THE OWNER AND OWNERS REPRESENTATIVE.
- THE CONTRACTOR SHALL MAINTAIN ALL UTILITY SERVICES TO ADJACENT PROPERTIES AT ALL TIMES. UTILITY SERVICES SHALL NOT BE INTERRUPTED WITHOUT APPROVAL FROM THE CONSTRUCTION MANAGER AND COORDINATION WITH THE ADJACENT PROPERTIES AND/OR THE CITY.
- THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
- THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THE PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR LOCATIONS OF EXISTING UTILITIES WITHIN ALL AREAS OF PROPOSED WORK.
- ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS ANY OBSTACLES THAT MAY OCCUR ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PRECEDING WITH THE WORK.
- ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC, AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. CONTRACTOR SHALL PAY CLOSE ATTENTION TO EXISTING UTILITIES WITHIN ANY ROAD RIGHT-OF-WAY DURING CONSTRUCTION.
- CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC. (AND OTHER APPROPRIATE BEST MANAGEMENT PRACTICES) AS APPROVED BY THE CONSTRUCTION MANAGER. MAINTENANCE OF TRAFFIC CONTROL SHALL BE COORDINATED IN ACCORDANCE WITH MINNEAPOLIS, HENNEPIN COUNTY AND MINDOT.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES DURING CONSTRUCTION, AND SHALL NOTIFY ALL PROPERTIES IF ACCESS WILL BE INTERRUPTED OR ALTERED AT ANY TIME DURING CONSTRUCTION.
- PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.
- CONTRACTOR MAY LIMIT SAW-CUT AND PAVEMENT REMOVAL TO ONLY THOSE AREAS WHERE IT IS REQUIRED AS SHOWN ON THESE CONSTRUCTION PLANS BUT IF ANY DAMAGE IS INCURRED ON ANY OF THE SURROUNDING PAVEMENT, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL AND REPAIR.
- THE CONTRACTOR SHALL COORDINATE WATER MAIN WORK WITH THE FIRE DEPT. AND THE CITY WATER DEPARTMENT TO PLAN PROPOSED IMPROVEMENTS AND TO ENSURE ADEQUATE FIRE PROTECTION IS CONSTANTLY AVAILABLE TO THE SITE THROUGHOUT THIS SPECIFIC WORK AND THROUGH ALL PHASES OF CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR ARRANGING/PROVIDING ANY REQUIRED WATER MAIN SHUT OFFS WITH THE CITY OF MINNEAPOLIS DURING CONSTRUCTION. ANY COSTS ASSOCIATED WITH WATER MAIN SHUT OFF'S WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO EXTRA COMPENSATION WILL BE PROVIDED.
- REFER TO SURVEY FOR ALL EXISTING INVERT AND RIM ELEVATIONS.
- ALL UTILITIES SHOWN ARE EXISTING UTILITIES.
- IN THE EVENT A WELL IS FOUND, THE CONTRACTOR SHALL CONTACT THE ENGINEER AND OWNER IMMEDIATELY. ALL WELLS SHALL BE SEALED BY A LICENSED WELL CONTRACTOR IN ACCORDANCE WITH ALL STATE OF MN REQUIREMENTS.
- IN THE EVENT THAT UNKNOWN CONTAINERS OR TANKS ARE ENCOUNTERED, THE CONTRACTOR SHALL CONTACT THE OWNER AND/OR OWNERS REPRESENTATIVE IMMEDIATELY. ALL CONTAINERS SHALL BE DISPOSED OF AT A PERMITTED LANDFILL PER THE PROJECT DOCUMENTS.
- CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY EXISTING DRAIN TILE IS ENCOUNTERED ON SITE. NO ACTIVE DRAIN TILE SHALL BE REMOVED WITHOUT APPROVAL FROM THE ENGINEER.

LEGEND

| | |
|--|---|
| | PROPERTY LINE |
| | CLEARING & GRUBBING |
| | REMOVE CONCRETE SURFACE |
| | REMOVE AND REPLACE ASPHALT/CONCRETE PAVEMENT TO MATCH EXISTING PAVEMENT SECTION PER CITY OF MINNEAPOLIS STANDARDS. EXACT PAVEMENT DEPTH IS UNKNOWN. |
| | FULL DEPTH SAWCUT |
| | REMOVE TREE |
| | REMOVE CONCRETE CURB & GUTTER |
| | REMOVE UTILITY LINES |
| | FILL & ABANDON UTILITY LINES |
| | LIMITS OF CONSTRUCTION |
| | EXISTING OVERHEAD POWER LINE |
| | EXISTING CHAINLINK FENCE |
| | EXISTING J-BARRIER |
| | EXISTING RETAINING WALL |
| | EXISTING SANITARY SEWER |
| | EXISTING STORM SEWER |
| | EXISTING WATERMAIN |
| | EXISTING GAS MAIN |
| | EXISTING UNDERGROUND TELEPHONE |
| | EXISTING UNDERGROUND CABLE |
| | EXISTING CONTOUR |
| | EXISTING CURB & GUTTER |
| | EXISTING SIGN |
| | EXISTING FLARED END SECTION |
| | EXISTING STORM MANHOLE |
| | EXISTING STORM CATCHBASIN |
| | EXISTING GAS METER |
| | EXISTING POST INDICATOR VALVE |
| | EXISTING WELL |
| | EXISTING AUTOMATIC SPRINKLER |
| | EXISTING ROOF DRAIN |
| | EXISTING GATE VALVE |
| | EXISTING HYDRANT |
| | EXISTING METAL COVER |
| | EXISTING ELECTRICAL METER |
| | EXISTING AIR CONDITIONER |
| | EXISTING TELEPHONE MANHOLE |
| | EXISTING CABLE BOX |
| | EXISTING GUY WIRE |
| | EXISTING POWER POLE |
| | EXISTING LIGHT POLE |
| | EXISTING TREE |
| | EXISTING TREE LINE |



KEYNOTE LEGEND

- (A) CLEAR AND GRUB EXISTING VEGETATION, ROCK MULCH OR LANDSCAPING
- (B) REMOVE EXISTING TREE
- (C) REMOVE EXISTING CURB
- (D) REMOVE EXISTING STORM SEWER
- (E) REMOVE EXISTING STORM STRUCTURE
- (F) EXISTING OVERHEAD POWERLINES AND POWER POLES TO BE REMOVED AND RELOCATED, COORDINATE WITH XCEL ENERGY. MAINTAIN SERVICES TO ADJACENT PROPERTIES AT ALL TIMES
- (G) REMOVE EXISTING CONCRETE

PROTECT EXISTING 18" RCP STORM SEWER TO REMAIN

EXISTING MONOPOLE TRANSMISSION TOWER INSTALLED BY OTHERS, PROTECT FROM DAMAGE

PROTECT EXISTING GAS MAIN TO REMAIN

PROTECT EXISTING 48" SANITARY SEWER TO REMAIN

EXISTING OVERHEAD POWER LINES TO REMAIN, PROTECT FROM DAMAGE. CONTRACTOR SHALL COORDINATE WITH XCEL ENERGY TO ENSURE PROPER SEPARATION IS PROVIDED PER XCEL AND OSHA GUIDELINES

EXISTING XCEL EASEMENT TO BE VACATED AND MODIFIED

CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL SEPARATION DISTANCES REQUIRED BY XCEL ENERGY AND OSHA REGULATIONS FROM THE EXISTING OVERHEAD TRANSMISSION LINES

EXISTING TRANSMISSION TOWER TO BE REMOVED AND RELOCATED BY OTHERS, RELOCATED MONOPOLE DESIGN BY OTHERS

SERVICE TO ADJACENT PROPERTIES SHALL BE MAINTAINED AT ALL TIMES, COORDINATE RELOCATION WITH XCEL ENERGY

SINGLE-FAMILY RESIDENTIAL UNITS

ALLEY

CITY OF MINNEAPOLIS ROW

HIAWATHA PLAZA

EXISTING CURB PARKING LOT

NOT FOR
CONSTRUCTION

CERTIFICATION

DRAWN BY: BPG
CHECKED BY: BRJ
COMMISSION NUMBER: 2272.02

SHEET TITLE

DEMO PLAN

SHEET NUMBER

C200

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LEGEND

- ROCK ENTRANCE
- INLET PROTECTION
- SILT FENCE
- LIMITS OF DISTURBANCE
- SAFETY FENCE
- SOIL BOUNDARY
- URBAN LAND-BYGLAND, MAP > 25, 1 TO 6 PERCENT SLOPES
- URBAN LAND-HUBBARD COMPLEX, MISSISSIPPI RIVER VALLEY, 0 TO 6 PERCENT SLOPES

EROSION CONTROL PLAN NOTES

- ALL PERIMETER SILT FENCE AND ROCK CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL CONSTRUCT DRAINAGE BASINS PRIOR TO SITE GRADING.
- THE CONTRACTOR SHALL INSTALL CATCH BASIN EROSION CONTROL MEASURES.
- WITHIN ONE WEEK (7 DAYS) OF SITE GRADING, ALL DISTURBED AREAS SHALL BE STABILIZED WITH SEED, SOD, OR ROCK BASE. REFER TO LANDSCAPE PLANS FOR MATERIALS.
- ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH CITY, STATE, AND WATERSHED DISTRICT PERMITS.
- THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES, INCLUDING THE REMOVAL OF SILT IN FRONT OF SILT FENCES DURING THE DURATION OF THE CONSTRUCTION.
- ANY EXCESS SEDIMENT IN PROPOSED BASINS SHALL BE REMOVED BY THE CONTRACTOR.
- REMOVAL ALL EROSION CONTROL MEASURES AFTER VEGETATION IS ESTABLISHED.
- THE CONTRACTOR SHALL REMOVE ALL SOILS AND SEDIMENT TRACKED ONTO EXISTING STREETS AND PAVED AREAS AND SHALL SWEEP ADJACENT STREETS AS NECESSARY IN ACCORDANCE WITH CITY REQUIREMENTS.
- IF BLOWING DUST BECOMES A NUISANCE, THE CONTRACTOR SHALL APPLY WATER FROM A TANK TRUCK TO ALL CONSTRUCTION AREAS.

SEQUENCE OF CONSTRUCTION:

UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAYDOWN, PORTA-POTTY, WHEEL WASH, CONCRETE WASHOUT, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., IMMEDIATELY DENOTE THEM ON THE SITE MAPS AND NOTE ANY CHANGES IN LOCATION AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.

BMP AND EROSION CONTROL INSTALLATION SEQUENCE SHALL BE AS FOLLOWS:

- INSTALL INLET PROTECTION AT EXISTING STORMWATER INLETS.
- CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE (1), CONCRETE WASHOUT PIT (1) AND INSTALL SILT FENCE.
- PREPARE TEMPORARY PARKING AND STORAGE AREA.
- CONSTRUCT AND STABILIZE DIVERSIONS AND TEMPORARY SEDIMENT TRAPS.
- PERFORM CLEARING AND GRUBBING OF THE SITE. PERFORM MASS GRADING, ROUGH GRADE TO ESTABLISH PROPOSED DRAINAGE PATTERNS.
- START CONSTRUCTION OF THE BUILDING PAD AND STRUCTURES.
- TEMPORARILY SEED WITH PURE LIVE SEED, THROUGHOUT CONSTRUCTION, DISTURBED AREAS THAT WILL BE INACTIVE FOR 7 DAYS OR MORE OR AS REQUIRED BY NPDES AND/OR CITY OF MINNEAPOLIS GRADING PERMIT.

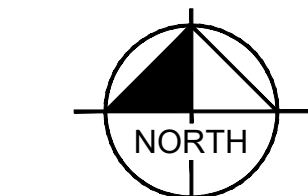
SWPPP UPDATES AND AMENDMENTS

THE GC MUST UPDATE THE SWPPP, INCLUDING THE JOBSITE BINDER AND SITE MAPS, TO REFLECT THE PROGRESS OF CONSTRUCTION ACTIVITIES AND GENERAL CHANGES TO THE PROJECT SITE. UPDATES SHALL BE MADE DAILY TO TRACK PROGRESS WHEN ANY OF THE FOLLOWING ACTIVITIES OCCUR: BMP INSTALLATION, MODIFICATION OR REMOVAL, CONSTRUCTION ACTIVITIES (E.G., PAVING, STORM SEWER INSTALLATION, FOOTING INSTALLATION, ETC.), CLEARING, GRUBBING OR GRADING, OR TEMPORARY OR PERMANENT STABILIZATION.

| | |
|----------------------------------|---------------------|
| LIMITS OF DISTURBANCE | 69,582 SF (1.60 AC) |
| TOTAL SITE AREA | 62,964 SF (1.45 AC) |
| PRE-DEVELOPMENT PERVIOUS AREA | 23,462 SF (0.54 AC) |
| PRE-DEVELOPMENT IMPERVIOUS AREA | 39,502 SF (0.91 AC) |
| POST-DEVELOPMENT PERVIOUS AREA | 12,627 SF (0.29 AC) |
| POST-DEVELOPMENT IMPERVIOUS AREA | 50,337 SF (1.16 AC) |

KEYNOTE LEGEND

- CONSTRUCTION ENTRANCE
- LIMITS OF DISTURBANCE
- SILT FENCE
- INLET PROTECTION
- CONSTRUCTION SAFETY FENCE
- SOIL BOUNDARY LINE



GRAPHIC SCALE IN FEET
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CONSULTANTS

PROJECT TITLE

3939 E 46TH STREET - PHASE II RESIDENTIAL

| ISSUE # | DATE | DESCRIPTION |
|---------|----------|--------------|
| 1 | 08/07/20 | PDR SUBMITAL |
| 2 | 10/09/20 | LUA SUBMITAL |

CERTIFICATION

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CONSTRUCTION**

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| DRAWN BY | BPG |
| CHECKED BY | BRJ |
| COMMISSION NUMBER | 2272.02 |

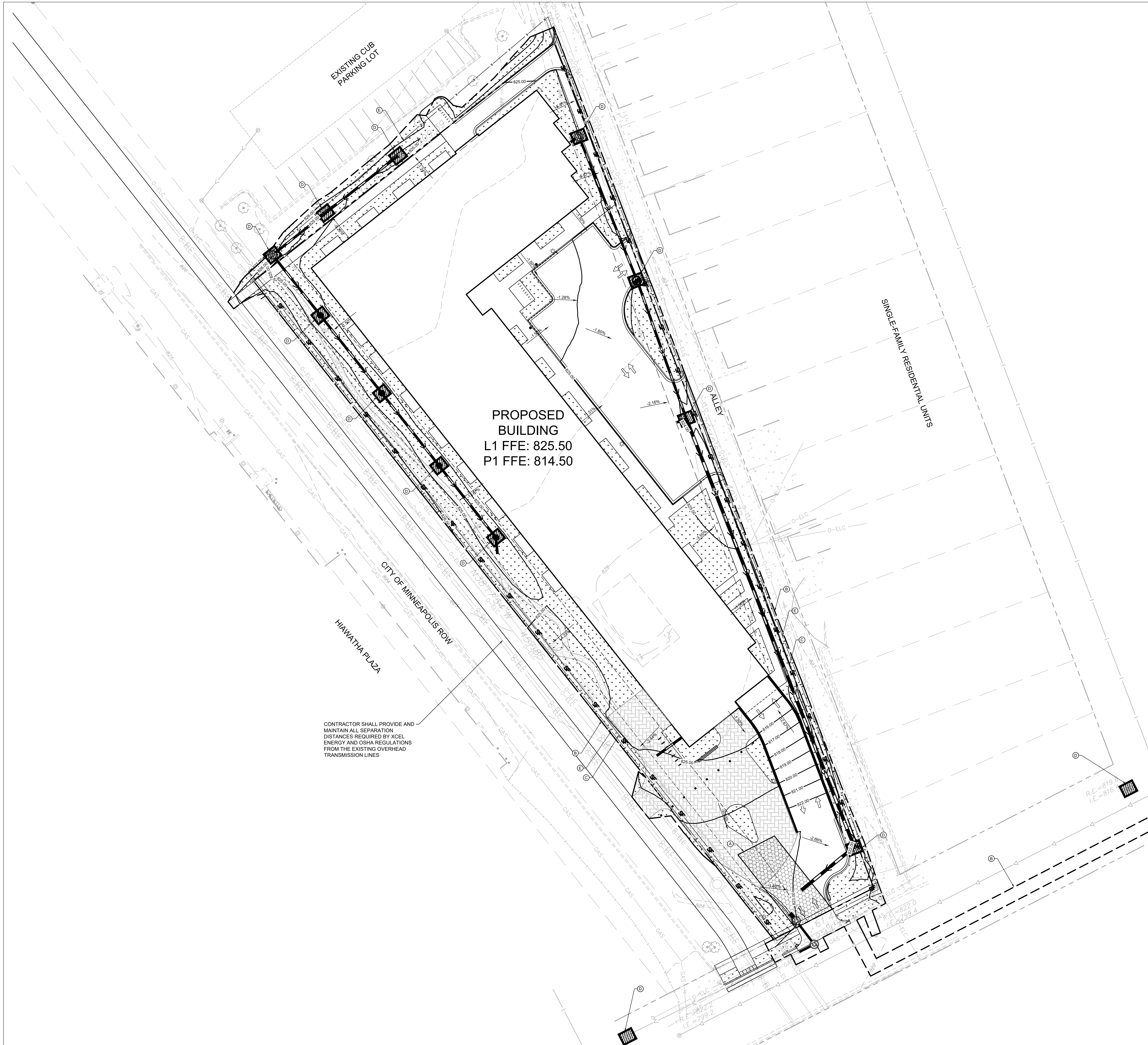
SHEET TITLE

EROSION AND SEDIMENT CONTROL PLAN - PHASE 1

SHEET NUMBER

C300

K:\TWC_LDEV\OPD\146TH AND HIAWATHA - MINNEAPOLIS, MN - PH II MULTIFAMILY3 DESIGN\CAD\PLANS\HETS\CO-EROS PH2 PLAN.DWG
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LEGEND

- ROCK ENTRANCE
- INLET PROTECTION
- SILT FENCE
- LIMITS OF DISTURBANCE
- SAFETY FENCE

EROSION CONTROL PLAN NOTES

- ALL PERIMETER SILT FENCE AND ROCK CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL CONSTRUCT DRAINAGE BASINS PRIOR TO SITE GRADING.
- THE CONTRACTOR SHALL INSTALL CATCH BASIN EROSION CONTROL MEASURES.
- WITHIN ONE WEEK (7 DAYS) OF SITE GRADING, ALL DISTURBED AREAS SHALL BE STABILIZED WITH SEED, SOD, OR ROCK BASE. REFER TO LANDSCAPE PLANS FOR MATERIALS.
- ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH CITY, STATE, AND WATERSHED DISTRICT PERMITS.
- THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES, INCLUDING THE REMOVAL OF SILT IN FRONT OF SILT FENCES DURING THE DURATION OF THE CONSTRUCTION.
- ANY EXCESS SEDIMENT IN PROPOSED BASINS SHALL BE REMOVED BY THE CONTRACTOR.
- REMOVAL ALL EROSION CONTROL MEASURES AFTER VEGETATION IS ESTABLISHED.
- THE CONTRACTOR SHALL REMOVE ALL SOILS AND SEDIMENT TRACKED ONTO EXISTING STREETS AND PAVED AREAS AND SHALL SWEEP ADJACENT STREETS AS NECESSARY IN ACCORDANCE WITH CITY REQUIREMENTS.
- IF BLOWING DUST BECOMES A NUISANCE, THE CONTRACTOR SHALL APPLY WATER FROM A TANK TRUCK TO ALL CONSTRUCTION AREAS.

SEQUENCE OF CONSTRUCTION:

UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAYDOWN, PORTA-POTTY, WHEEL WASH, CONCRETE WASHOUT, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC. IMMEDIATELY DENOTE THEM ON THE SITE MAPS AND NOTE ANY CHANGES IN LOCATION AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.

BMP AND EROSION CONTROL INSTALLATION SEQUENCE SHALL BE AS FOLLOWS:

- TEMPORARILY SEED THROUGHOUT CONSTRUCTION, DENUDED AREAS THAT WILL BE INACTIVE FOR 7 DAYS OR MORE.
- INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, UNDERGROUND SYSTEM, CURBS AND GUTTERS.
- INSTALL APPROPRIATE INLET PROTECTION AT ALL STORM SEWER STRUCTURES AS EACH INLET STRUCTURE IS INSTALLED.
- PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.
- PREPARE SITE FOR PAVING.
- PAVE SITE AND INSTALL STRIPING.
- INSTALL APPROPRIATE INLET PROTECTION DEVICES FOR PAVED AREAS AS WORK PROGRESSES.
- COMPLETE GRADING AND INSTALLATION OF PERMANENT STABILIZATION OVER ALL AREAS.
- OBTAIN CONCURRENCE WITH THE CIVIL ENGINEERING CONSULTANT THAT THE SITE HAS BEEN FULLY STABILIZED THEN:
 - REMOVE ALL REMAINING TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES
 - STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF BMPs.

SWPPP UPDATES AND AMENDMENTS

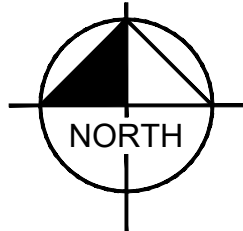
THE GC MUST UPDATE THE SWPPP, INCLUDING THE JOBSITE BINDER AND SITE MAPS, TO REFLECT THE PROGRESS OF CONSTRUCTION ACTIVITIES AND GENERAL CHANGES TO THE PROJECT SITE. UPDATES SHALL BE MADE DAILY TO TRACK PROGRESS WHEN ANY OF THE FOLLOWING ACTIVITIES OCCUR: BMP INSTALLATION, MODIFICATION OR REMOVAL, CONSTRUCTION ACTIVITIES (E.G., PAVING, STORM SEWER INSTALLATION, FOOTING INSTALLATION, ETC.), CLEARING, GRUBBING OR GRADING, OR TEMPORARY OR PERMANENT STABILIZATION.

| | |
|--------------------------------|---------------------|
| LIMITS OF DISTURBANCE | 69,582 SF (1.60 AC) |
| TOTAL SITE AREA | 62,964 SF (1.45 AC) |
| PRE-DEVELOPMENT PERVIOUS AREA | 23,462 SF (0.54 AC) |
| PRE-DEVELOPMENT IMPVIOUS AREA | 39,502 SF (0.91 AC) |
| POST-DEVELOPMENT PERVIOUS AREA | 12,627 SF (0.29 AC) |
| POST-DEVELOPMENT IMPVIOUS AREA | 50,337 SF (1.16 AC) |

KEYNOTE LEGEND

- CONSTRUCTION ENTRANCE
- LIMITS OF DISTURBANCE
- SILT FENCE
- INLET PROTECTION
- CONSTRUCTION SAFETY FENCE

| BMP QUANTITIES | | |
|-----------------------|------|----------|
| BMP | UNIT | QUANTITY |
| CONSTRUCTION ENTRANCE | EA. | 1 |
| SILT FENCE | LF | 994 |
| INLET PROTECTION | EA. | 12 |
| SAFETY FENCE | LF | 1,228 |



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PROJECT TITLE

3939 E 46TH
STREET - PHASE II
RESIDENTIAL

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CERTIFICATION

NOT FOR
CONSTRUCTION

| | |
|-------------------|---------|
| DRAWN BY | BPG |
| CHECKED BY | BRJ |
| COMMISSION NUMBER | 2272.02 |

SHEET TITLE

EROSION AND
SEDIMENT
CONTROL PLAN -
PHASE 2

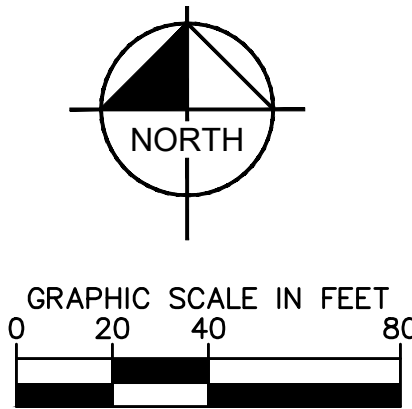
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C301



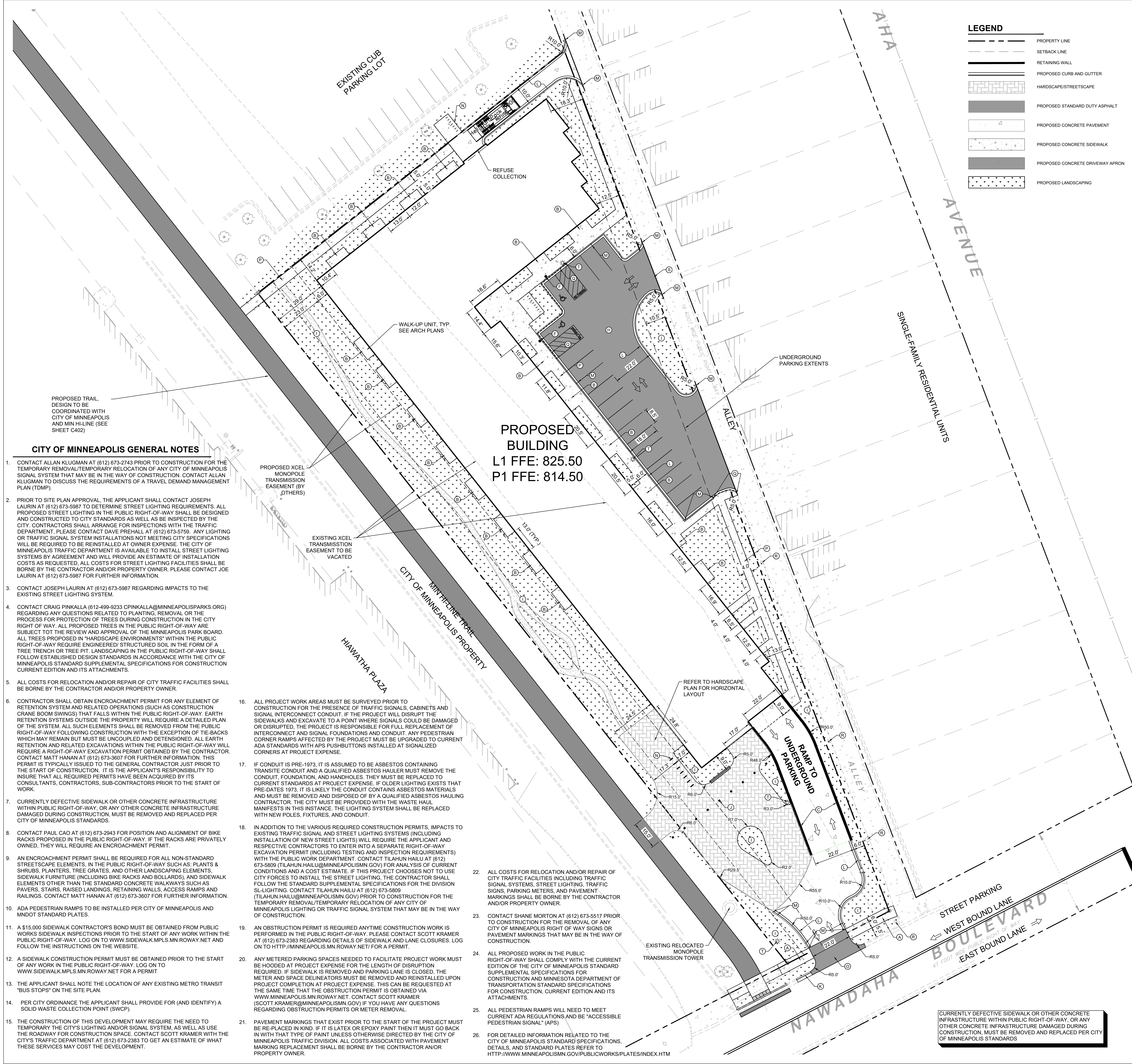
| LEGEND | |
|--------|----------------------------------|
| | PROPERTY LINE |
| | SETBACK LINE |
| | RETAINING WALL |
| | PROPOSED CURB AND GUTTER |
| | HARDSCAPE/STREETSCAPE |
| | PROPOSED STANDARD DUTY ASPHALT |
| | PROPOSED CONCRETE PAVEMENT |
| | PROPOSED CONCRETE SIDEWALK |
| | PROPOSED CONCRETE DRIVEWAY APRON |
| | PROPOSED LANDSCAPING |

| PROPERTY SUMMARY | |
|---|---|
| PHASE II MULTIFAMILY RESIDENTIAL | |
| TOTAL PROPERTY AREA | 62,964 SF (1.45 AC) |
| PROPOSED IMPERVIOUS AREA | 46,814 SF (1.07 AC) |
| PROPOSED GREEN SPACE ABOVE UNDERGROUND PARKING (IMPERVIOUS) | 2,495 SF (0.06 AC) |
| PROPOSED PERVIOUS AREA | 13,655 SF (0.31 AC) |
| TOTAL DISTURBED AREA | 69,705 SF (1.60 AC) |
| ZONING SUMMARY | |
| ZONING | C3A - COMMUNITY ACTIVITY CENTER |
| PARKING SETBACKS | FROM RAILROAD AND PUBLIC STREET - 7 FT FROM ALLEY - 9 FT |
| BUILDING SETBACKS | MAXIMUM - 8 FT |
| BUILDING DATA SUMMARY | |
| AREAS | |
| BUILDING AREA | 26,416 SF (42% OF TOTAL PROPERTY AREA) |
| PARKING | |
| REQUIRED PARKING | 70 SPACES @ 1/UNIT (W/ 50% TRANSIT REDUCTION) |
| PROPOSED PARKING | 16 STALLS |
| PROPOSED PARKING (UNDERGROUND) | 98 STALLS (SEE ARCH PLANS) |
| ADA STALLS REQ'D / PROVIDED | X STALLS / 2 STALLS |
| ADA STALLS REQ'D / PROVIDED (UNDERGROUND) | X STALLS / 4 STALLS (SEE ARCH PLANS) |



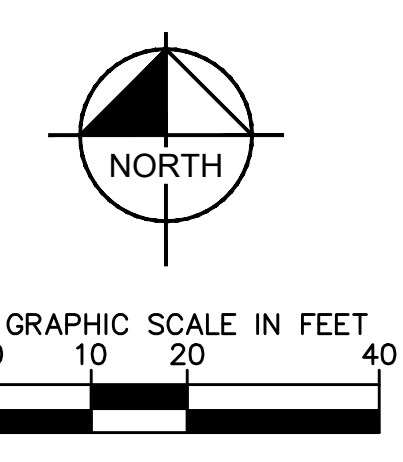
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| 2 | 10/09/20 | LUA SUBMITAL |

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10/8/2020 10:36:20 AM



LEGEND

- PROPERTY LINE
- SETBACK LINE
- RETAINING WALL
- PROPOSED CURB AND GUTTER
- HARDSCAPE/STREETSCAPE
- PROPOSED STANDARD DUTY ASPHALT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE DRIVEWAY APRON
- PROPOSED LANDSCAPING



| PROPERTY SUMMARY | |
|---|---------------------|
| PHASE II MULTIFAMILY RESIDENTIAL | |
| TOTAL PROPERTY AREA | 62,964 SF (1.45 AC) |
| PROPOSED IMPERVIOUS AREA | 48,023 SF (1.10 AC) |
| PROPOSED GREEN SPACE ABOVE UNDERGROUND PARKING (IMPERVIOUS) | 2,314 SF (0.05 AC) |
| PROPOSED PERVIOUS AREA | 12,627 SF (0.29 AC) |
| TOTAL DISTURBED AREA | 69,582 SF (1.60 AC) |

| ZONING SUMMARY | |
|-------------------|---|
| ZONING | C3A - COMMUNITY ACTIVITY CENTER |
| PARKING SETBACKS | FROM RAILROAD AND PUBLIC STREET - 7 FT FROM ALLEY - 9 FT |
| BUILDING SETBACKS | MAXIMUM - 8 FT |

| BUILDING DATA SUMMARY | |
|-----------------------------------|---|
| AREAS | |
| BUILDING AREA | 26,418 SF (42% OF TOTAL PROPERTY AREA) |
| PARKING | |
| REQUIRED PARKING | 70 SPACES @ 1/UNIT (W/ 50% TRANSIT REDUCTION) |
| PROPOSED PARKING | 16 STALLS |
| PROPOSED PARKING (UNDERGROUND) | 98 STALLS (SEE ARCH PLANS) |
| ADA STALLS PROVIDED | 2 STALLS |
| ADA STALLS PROVIDED (UNDERGROUND) | 3 STALLS (SEE ARCH PLANS) |

SITE PLAN NOTES

- ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
- CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PAVING, SIDEWALKS, EXIT PORCHES, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
- ALL CURBED RADII ARE TO BE 5' UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED OR RELOCATED AS NECESSARY. ALL COST SHALL BE INCLUDED IN BASE BID.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, UNLESS OTHERWISE NOTED ON PLANS INCLUDING BUT NOT LIMITED TO: ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES REQUIREMENTS AND PROJECT SITE WORK SPECIFICATIONS AND SHALL BE APPROVED BY SUCH ALL COST SHALL BE INCLUDED IN BASE BID.
- SITE BOUNDARY, TOPOGRAPHY, UTILITY AND ROAD INFORMATION TAKEN FROM A SURVEY BY EGAN, FIELD & NOWAK, DATED 06/23/2020.
KIMLEY-HORN ASSUMES NO LIABILITY FOR ANY ERRORS, INACCURACIES, OR OMISSIONS CONTAINED THEREIN.
- TOTAL LAND AREA IS 1.45 ACRES.
- PYLON / MONUMENT SIGNS SHALL BE CONSTRUCTED BY OTHERS. SIGNS ARE SHOWN FOR GRAPHICAL & INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO VERIFY SIZE, LOCATION AND ANY REQUIRED PERMITS NECESSARY FOR THE CONSTRUCTION OF THE PYLON / MONUMENT SIGN.
- CONTRACTOR SHALL REFERENCE ARCH / MEP PLANS FOR SITE LIGHTING AND ELECTRICAL PLAN.
- NO PROPOSED LANDSCAPING SUCH AS TREES OR SHRUBS, ABOVE AND UNDERGROUND STRUCTURES, OR OTHER OBSTRUCTIONS SHALL BE LOCATED WITHIN EXISTING OR PROPOSED UTILITY EASEMENTS AND RIGHTS OF WAY UNLESS SPECIFICALLY NOTED ON PLANS OTHERWISE.
- REFERENCE ARCHITECTURAL PLANS FOR DUMPSTER ENCLOSURE DETAILS.
- REFER TO FINAL PLAT OR ALTA SURVEY FOR EXACT LOT AND PROPERTY BOUNDARY DIMENSIONS.
- ALL AREAS ARE ROUNDED TO THE NEAREST SQUARE FOOT.
- ALL DIMENSIONS ARE ROUNDED TO THE NEAREST TENTH FOOT.
- ALL PARKING STALLS TO BE 9' IN WIDTH AND 18' IN LENGTH UNLESS OTHERWISE INDICATED.

KEYNOTE LEGEND

- (A) CONCRETE SIDEWALK PER CITY OF MINNEAPOLIS STD PLATE ROAD 2003-R1
- (B) 5' X 12' CONCRETE STOOP, SEE ARCH PLANS
- (C) RETAINING WALL WITH RAILING (SEE ARCHITECTURAL / STRUCTURAL PLANS)
- (D) ACCESSIBLE CURB RAMP
- (E) ACCESSIBLE PARKING SIGN
- (F) ACCESSIBLE PARKING
- (G) AREA STRIPED WITH 4" SYSL @ 45° 2" O.C.
- (H) STANDARD DUTY ASPHALT PAVEMENT
- (I) LANDSCAPE AREA - SEE LANDSCAPE PLANS
- (J) BOLLARD (TYP.)
- (K) MODIFIED B612 CURB AND GUTTER PER CITY OF MINNEAPOLIS STANDARD PLATES NO. ROAD-1004 AND ROAD-1010
- (L) B612 CURB & GUTTER (TYP.)
- (M) CURB TRANSITION, FLUSH TO 6" CURB HEIGHT
- (N) PROPOSED BIKE RACK / BIKE STORAGE
- (O) DRIVEWAY APRON PER CITY OF MINNEAPOLIS STD PLATES, ROAD-2000-R1, ROAD-2001-R1, ROAD-2002, AND ROAD-2003-R1
- (P) SITE SIDEWALK
- (Q) FLUSH CURB
- (R) EXISTING UTILITY POLE TO REMAIN
- (S) EXISTING UTILITY POLE TO BE RELOCATED
- (T) PROPOSED LIGHT POLE, SEE LIGHTING PLANS

CURRENTLY DEFECTIVE SIDEWALK OR OTHER CONCRETE INFRASTRUCTURE WITHIN PUBLIC RIGHT-OF-WAY, OR ANY OTHER CONCRETE INFRASTRUCTURE DAMAGED DURING CONSTRUCTION, MUST BE REMOVED AND REPLACED PER CITY OF MINNEAPOLIS STANDARDS

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PROJECT TITLE
3939 E 46TH STREET - PHASE II RESIDENTIAL

| ISSUE # | DATE | DESCRIPTION |
|---------|----------|--------------|
| 1 | 08/07/20 | PDR SUBMITAL |
| 2 | 10/09/20 | LUA SUBMITAL |

CERTIFICATION

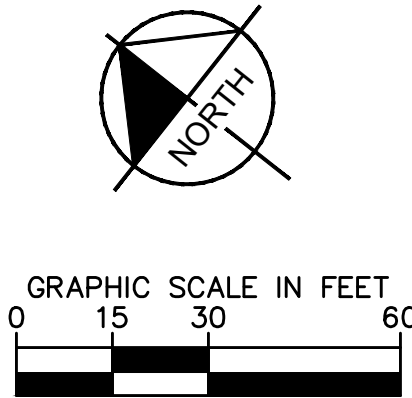
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SHEET TITLE
SITE PLAN



- LEGEND**
- PROPERTY LINE
 - SETBACK LINE
 - PROPOSED CURB AND GUTTER
 - PROPOSED ASPHALT TRAIL
 - PROPOSED CONCRETE SIDEWALK
 - PROPOSED LANDSCAPING

- KEYNOTE LEGEND**
- A CONCRETE SIDEWALK PER CITY OF MINNEAPOLIS STD PLATE ROAD 2003-R1
 - B ASPHALT TRAIL - DESIGN TO BE COORDINATED WITH CITY OF MINNEAPOLIS AND MIN HI-LINE
 - C DETECTABLE WARNING STRIP
 - D STANDARD DUTY ASPHALT PAVEMENT RESTORATION
 - E LANDSCAPE RESTORATION
 - F FLUSH CURB



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SHEET TITLE
TRAIL SITE PLAN

SHEET NUMBER
C402
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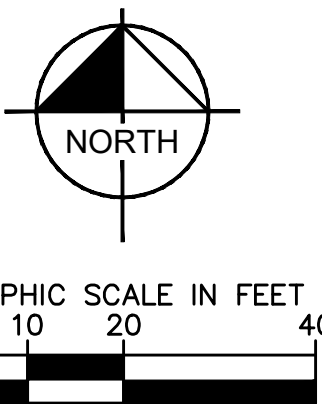
K:\TWC_LDEV\OPD\146TH AND HAWATHA - MINNEAPOLIS, MN - PH II MULTIFAMILY3 DESIGN\CAD\PLANS\SHEETS\C5-GRADING PLANDWG
10/9/2020 10:14:55 AM



LEGEND

| | |
|-----|--|
| --- | PROPERTY LINE |
| --- | EXISTING CONTOUR |
| --- | PROPOSED CONTOUR |
| ○ | PROPOSED STORM MANHOLE (ROUND INLET CASTING) |
| ● | PROPOSED STORM MANHOLE (ROUND INLET CASTING) |
| ○ | PROPOSED STORM MANHOLE/ CATCH BASIN (CURB INLET CASTING) |
| ○ | PROPOSED STORM SEWER CLENOUT |
| ○ | PROPOSED FLARED END SECTION |
| ○ | PROPOSED RIPRAP |
| ○ | PROPOSED STORM SEWER |
| ○ | PROPOSED STORM SEWER |
| ○ | PROPOSED SPOT ELEVATION |
| ○ | PROPOSED HIGH POINT ELEVATION |
| ○ | PROPOSED LOW POINT ELEVATION |
| ○ | PROPOSED GUTTER ELEVATION |
| ○ | PROPOSED TOP OF CURB ELEVATION |
| ○ | PROPOSED FLUSH PAVEMENT ELEVATION |
| ○ | MATCH EXISTING ELEVATION |
| ○ | PROPOSED EMERGENCY OVERFLOW |
| ○ | PROPOSED DRAINAGE DIRECTION |
| ○ | PROPOSED ADA SLOPE |

- GRADING PLAN NOTES**
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF MINNEAPOLIS, SPECIFICATIONS AND BUILDING PERMIT REQUIREMENTS.
 - CONTRACTOR TO CALL GOPHER STATE CALL ONE @ <1-800-252-1166> AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION/CONSTRUCTION FOR UTILITY LOCATIONS.
 - STORM SEWER PIPE SHALL BE AS FOLLOWS:
ROP PER ASTM C-76
HOPE: 0" - 10" PER AASHTO M-252
HOPE: 12" OR GREATER PER ASTM F-336
PVC SCH. 40 PER ASTM D-3034
STORM SEWER FITTINGS SHALL BE AS FOLLOWS:
ROP PER ASTM C-76, JOINTS PER ASTM C-361, C-390, AND C-443
HOPE PER ASTM D-312
PVC PER ASTM D-3034, JOINTS PER ASTM D-3212
 - CONTRACTOR TO FIELD VERIFY THE LOCATIONS AND ELEVATIONS OR EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE START OF SITE GRADING. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS.
 - SUBGRADE EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER EXCAVATION TO HELP OFFSET ANY STABILITY PROBLEMS DUE TO WATER SEEPAGE OR STEEP SLOPES. WHEN PLACING NEW SURFACE MATERIAL ADJACENT TO EXISTING PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING OF EXISTING PAVEMENT.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROL.
 - CONTRACTOR SHALL EXCAVATE DRAINAGE TRENCHES TO FOLLOW PROPOSED STORM SEWER ALIGNMENTS.
 - GRADES SHOWN ARE FINISHED GRADES. CONTRACTOR SHALL ROUGH GRADE TO SUBGRADE ELEVATION AND LEAVE STREET READY FOR SUBBASE.
 - ALL EXCESS MATERIAL, BITUMINOUS SURFACING, CONCRETE ITEMS, ANY ABANDONED UTILITY ITEMS, AND OTHER UNSTABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE CONSTRUCTION SITE.
 - REFER TO THE UTILITY PLAN FOR SANITARY SEWER MAIN, WATER MAIN SERVICE LAYOUT AND ELEVATIONS AND CASTING / STRUCTURE NOTATION.
 - CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF PAVEMENTS AND CURB AND GUTTER WITH SMOOTH UNIFORM SLOPES TO PROVIDE POSITIVE DRAINAGE.
 - INSTALL A MINIMUM OF <4" CLASS 5+ AGGREGATE BASE UNDER CURB AND GUTTER AND CONCRETE SIDEWALKS.
 - UPON COMPLETION OF EXCAVATION AND FILLING, CONTRACTOR SHALL RESTORE ALL STREETS AND DISTURBED AREAS ON SITE. ALL DISTURBED AREAS SHALL BE RE-VEGETATED WITH A MINIMUM OF <4" OF TOPSOIL.
 - ALL SPOT ELEVATIONS/CONTOURS ARE TO GUTTER / FLOW LINE UNLESS OTHERWISE NOTED.
 - GRADING FOR ALL SIDEWALKS AND ACCESSIBLE ROUTES INCLUDING CROSSING DRIVEWAYS SHALL CONFORM TO CURRENT ADA STATE/NATIONAL STANDARDS. IN NO CASE SHALL ACCESSIBLE RAMP SLOPES EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWALK CROSS SLOPES EXCEED 2%. IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPES EXCEED 5%. IN NO CASE SHALL ACCESSIBLE PARKING STALLS OR AISLES EXCEED 2% (1.5% TARGET) IN ALL DIRECTIONS. SIDEWALK ACCESS TO EXTERNAL BUILDING DOORS AND GATES SHALL BE ADA COMPLIANT. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ADA CRITERIA CANNOT BE MET IN ANY LOCATION PRIOR TO PAVING. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR A.D.A COMPLIANCE ISSUES.
 - MAINTAIN A MINIMUM OF 0.5% GUTTER SLOPE TOWARDS LOW POINTS.
 - CONTRACTOR TO PROVIDE 3" INSULATION BY 5' WIDE CENTERED ON STORM PIPE IF LESS THAN 4" OF COVER IN PAVEMENT AREAS AND LESS THAN 3' OF COVER IN LANDSCAPE AREAS.
 - ROOF DRAIN INVERT CONNECTIONS AT THE BUILDING SHALL BE AT ELEVATION -XXXX.XX- OR LOWER UNLESS NOTED OTHERWISE. REFERENCE MEP PLANS FOR ROOF DRAIN CONNECTION.
 - ALL STORM SEWER CONNECTIONS SHALL BE GASKETED AND WATER TIGHT INCLUDING MANHOLE CONNECTIONS.
 - ALL STORM SEWER PIPE SHALL BE AIR TESTED IN ACCORDANCE WITH THE CURRENT PLUMBING CODE.
 - MAINTAIN A MINIMUM OF 1.25% SLOPE IN BITUMINOUS PAVEMENT AREAS, 0.5% SLOPE IN CONCRETE PAVEMENT AREAS.
 - CONTRACTOR SHALL REVIEW PAVEMENT GRADIENT AND CONSTRUCT "INFALL CURB" WHERE PAVEMENT DRAINS TOWARD GUTTER, AND "OUTFALL" CURB WHERE PAVEMENT DRAINS AWAY FROM GUTTER.



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PROJECT TITLE

3939 E 46TH
STREET - PHASE II
RESIDENTIAL

| ISSUE # | DATE | DESCRIPTION |
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| 2 | 10/09/20 | LUA SUBMITAL |

CERTIFICATION

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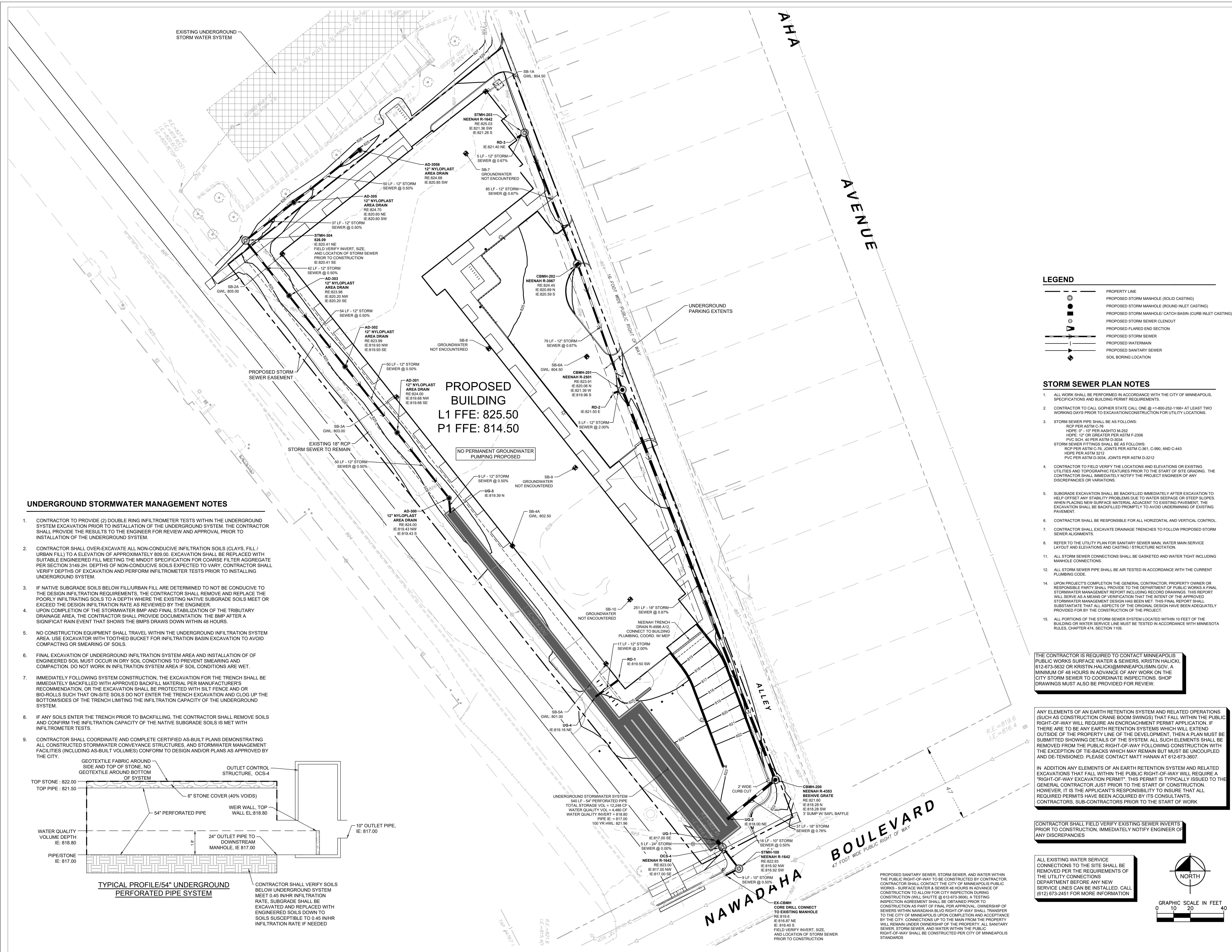
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COMMISSION NUMBER: 2272.02

SHEET TITLE
GRADING PLAN

SHEET NUMBER

C500

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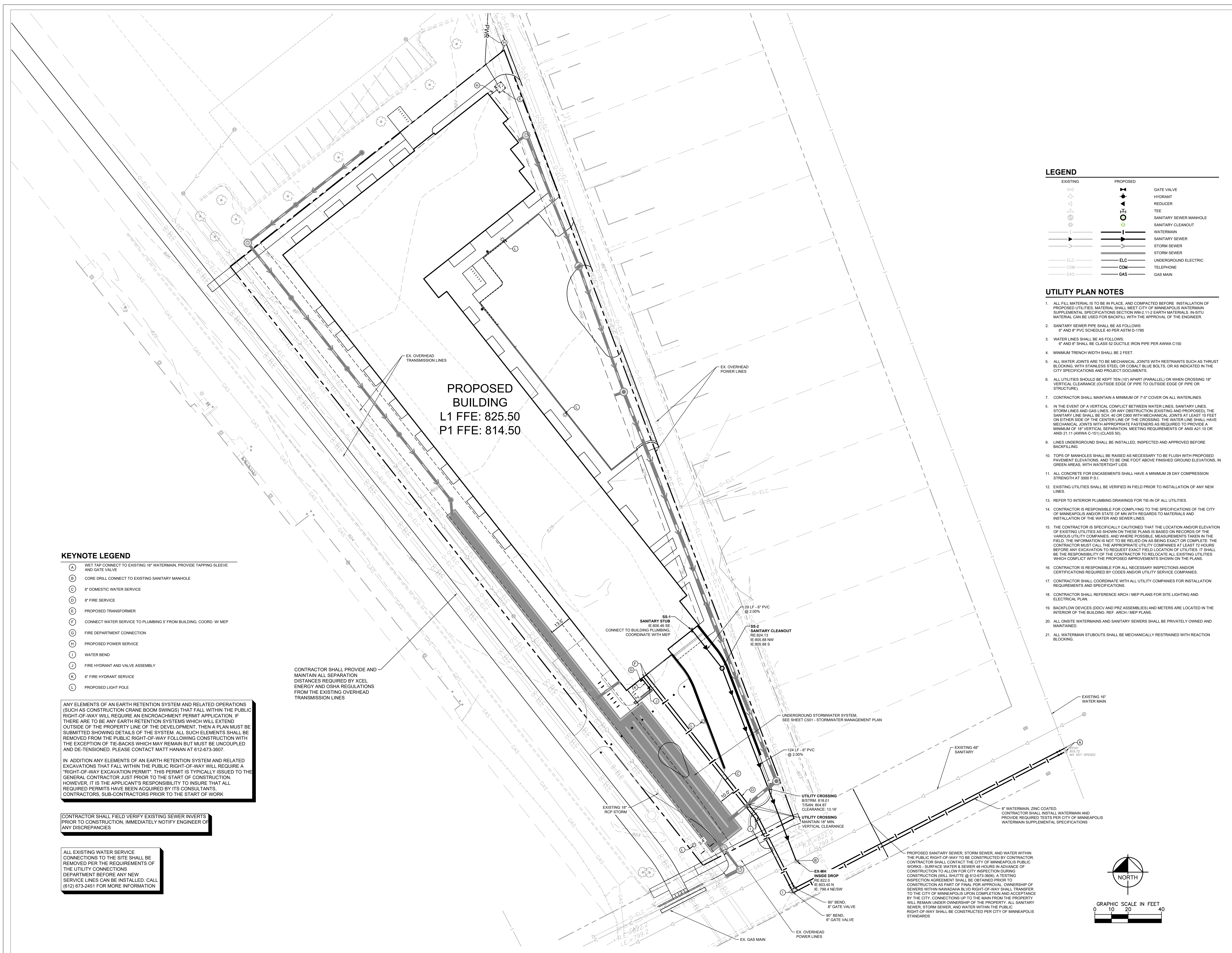
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UTILITY PLAN

C600



HAIL PARTICLES EROSION CONTROL AS INDICATED IN PLANS PRIOR TO START TO WORK. HAIL BASES ARE NOT ALLOWED AS EROSION & SEDIMENT CONTROL DEVICE IN MINNEAPOLIS.

ESTABLISH ROCK CONSTRUCTION ENTRANCES PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES. EXISTING AGGREGATE SURFACES MAY BE USED FOR ROCK ENTRIES IF THE SURFACE IS REQUIRED.

SOIL AND SOIL-LIKE SEDIMENTS DEPOSITED ONTO DRIVE OR PRIVATE PAVEMENT AREAS WITHIN 24 HOURS OF DEPOSITION. REMOVAL OF TRUCKING MATERIALS SHALL BE COMPLETED AT THE END OF EACH WORK DAY WHEN TRUCKING OCCURS. SWEETING MAY BE ORDERED AT ANY TIME IN CONDITIONS VARYING FROM WET TO DRY. SWEETING SHALL BE PERFORMED BY A PERSONNEL CAPABLE OF MAINTAINING THE ROAD TO PREVENT DUST FROM BEING BLOWN TO ADJACENT PROPERTIES.

STORMWATER RUNOFF MANAGEMENT: ALL PROPERTIES WHICH RECEIVE RUNOFF FROM THE DISTURBED AREA, CATCH BASIN INSERTS ARE REQUIRED AT ALL LOCATIONS NOT WITHIN THE DISTURBED AREA. CATCH BASINS MUST BE MAINTAINED FREE OF OBSTRUCTIONS. ALL FLOOD DAMAGE WRAPPED GARAGE AREAS ARE EFFECTIVE ARE NOT APPLIED FOR USE AS PROTECTIVE DEVICES.


LOCAL LAKE, SOIL AND DIRT PILES LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY SHALL BE COVERED WITH MULCH, VEGETATION, OR OTHER MEANS. TEMPORARY STOCKPILES STABILIZED BY MULCHING, VEGETATIVE COVER, TAPPING OR OTHER MEANS, TEMPORARY STOCKPILES SHALL BE COVERED WITH MULCH, VEGETATION, OR OTHER MEANS. STOCKPILE REMOVAL SHALL BE COVERED, REMAINING MORE THAN 24 HOURS.

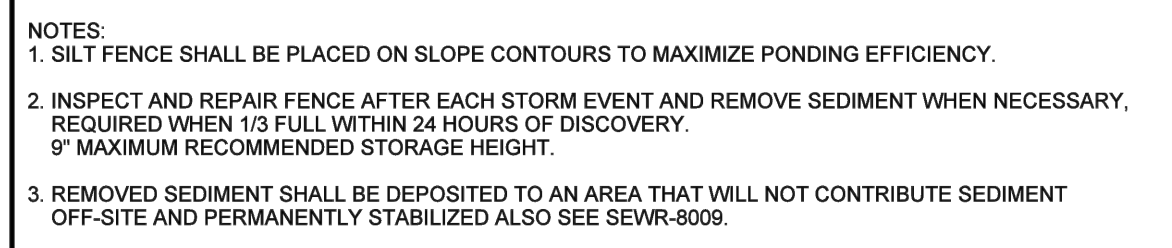
MATERIAL ALL TEMPORARY EROSION CONTROL DEVICES IN PLACE UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN FULLY RESTORED TO ORIGINAL CONDITION. TEMPORARY DEVICES ARE REQUIRED ON A WEEKLY BASIS AND REPLACE DETERIORATED, DAMAGED OR ROTTED EROSION CONTROL DEVICES.

MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PERFORMED WHENEVER THE DEVICE IS 30% FULL. FAILURE TO MAINTAIN EROSION CONTROL DEVICES MAY LEAD TO FURTHER DELAYS TO THE PROJECT. WEEKLY INSPECTIONS REQUIRED AND AFTER EACH 1/2" OR MORE RAIN EVENT WITHIN 24 HRS.

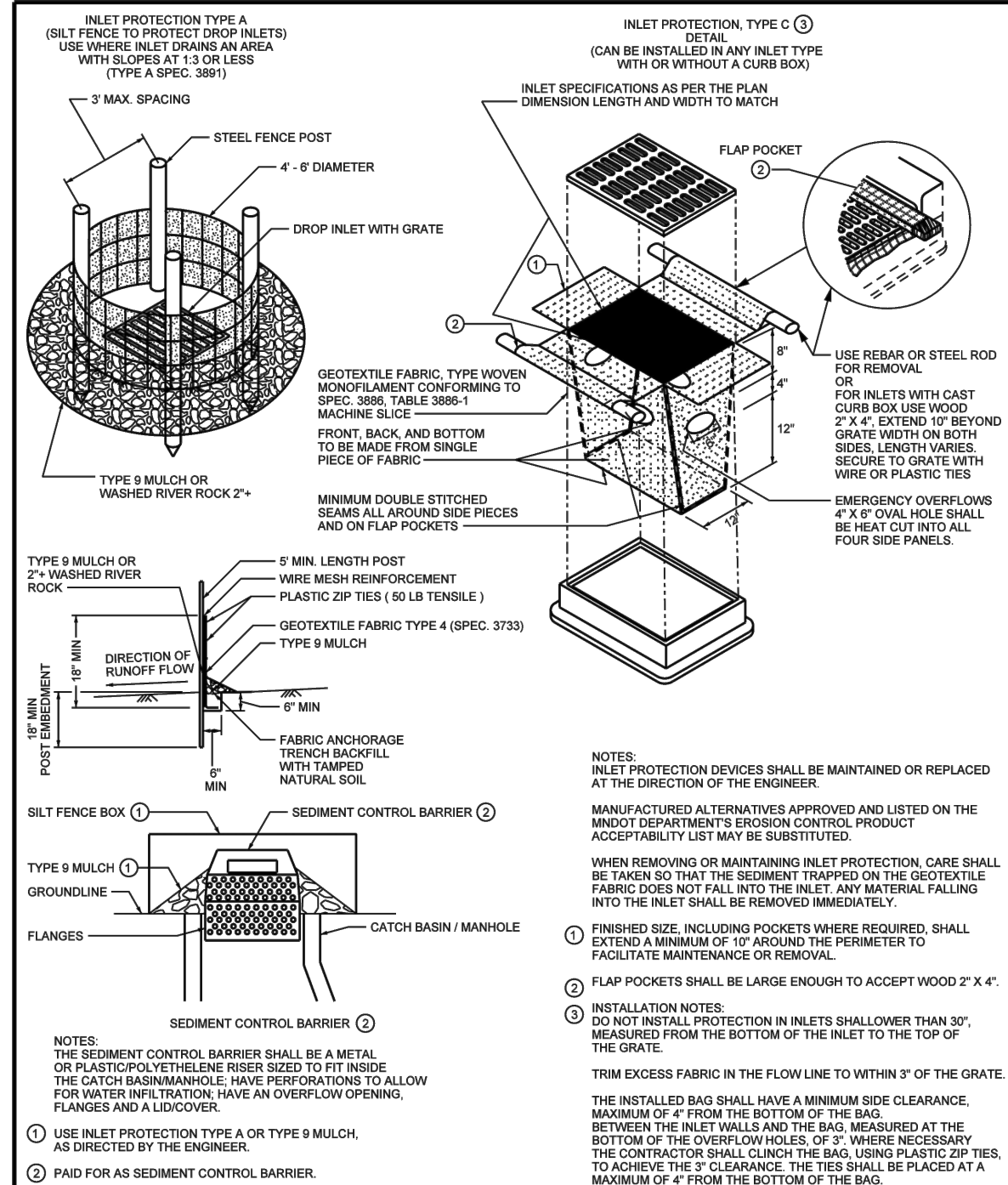
READY MIXED CONCRETE AND BATCH PLAN WASHOUTS PROHIBITED WITHIN THE PUBLIC RIGHT OF WAY, INCLUDING BUT NOT LIMITED TO STREET CURBS, SIDEWALKS, PARKING LOTS, DRIVEWAYS AND DRIVEWAYS AND CIRCUMSTANCES MAY WASHOUT WATER DRAIN ONTO THE PUBLIC RIGHT OF WAY OR INTO THE PUBLIC STORMWATER SYSTEM.

TEMPORARY OR PERMANENTLY STABILIZE ALL DENuded AREAS WHICH HAVE BEEN FINSH GRADDED WITHIN 7-14 DAYS (SLIDE DEPENDING) USE SEEDING AND MULCHING. EROSION CONTROL MATTING SHALL BE INSTALLED TEMPORARILY TO PROTECT AREAS WHERE SEEDING AND MULCHING APPLICATION OF GRAVEL BASE AREAS DESIGNATED FOR PAVED SURFACING.

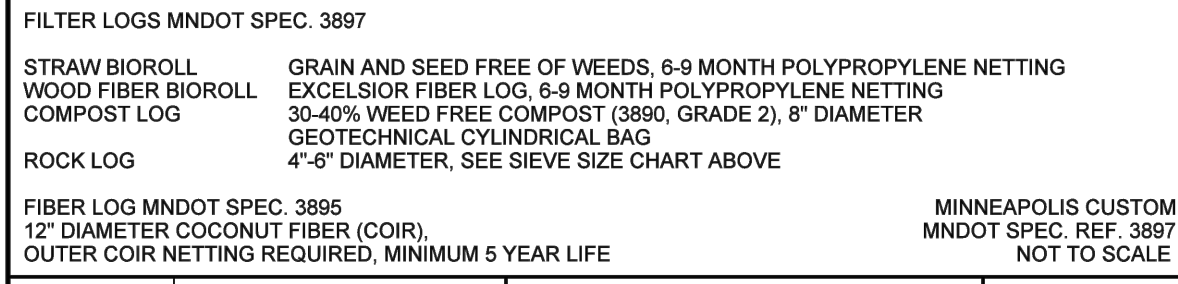
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|  | MINNEAPOLIS DEPARTMENT OF PUBLIC WORKS | | STANDARD PLATE NO. SEWR-8007 |
| | DRAWN DGD | DATE 8/06 | |
| | APPROVED HRS | DATE 3/07 | |



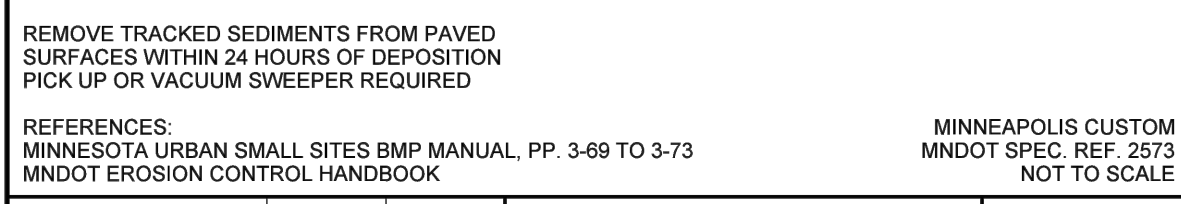
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|  | MINNEAPOLIS DEPARTMENT OF PUBLIC WORKS | | STANDARD PLATE NO. SEWR-8001 |
| | DRAWN: CJD | DATE: 3/03 | |
| | APPROVED: HRS | DATE: 4/07 | |



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|  | MINNEAPOLIS DEPARTMENT OF PUBLIC WORKS | | INLET PROTECTION TYPE A & C | STANDARD PLATE NO. SEWR-8003 |
| | DRAWN: DCD | DATE: 1/05 | | |
| | APPROVED: HRS | DATE: 4/07 | | |




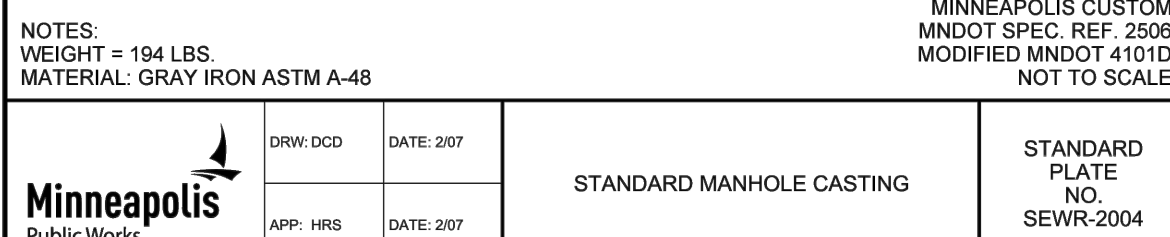
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|  | MINNEAPOLIS DEPARTMENT OF PUBLIC WORKS | | STANDARD PLATE NO. SEWR-8008 |
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| | APPROVED HRS | DATE: 4/07 | |



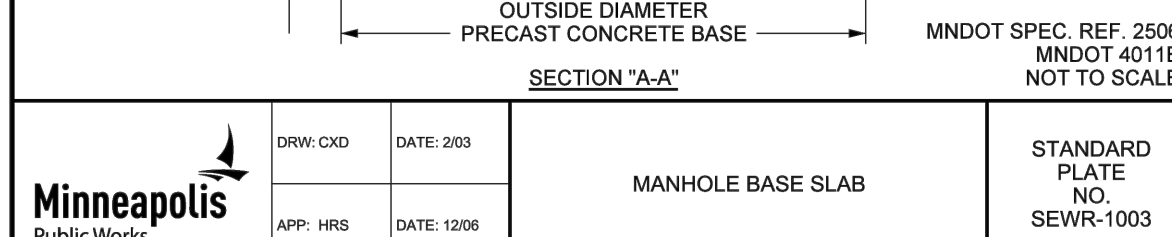
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|  | DRW: OGD | DATE: 3/07 | SEDIMENT CONTROL -- ROCK ENTRANCE | STANDARD PLATE NO. SEWR-8002 |
| | APP: HRS | DATE: 4/07 | | |



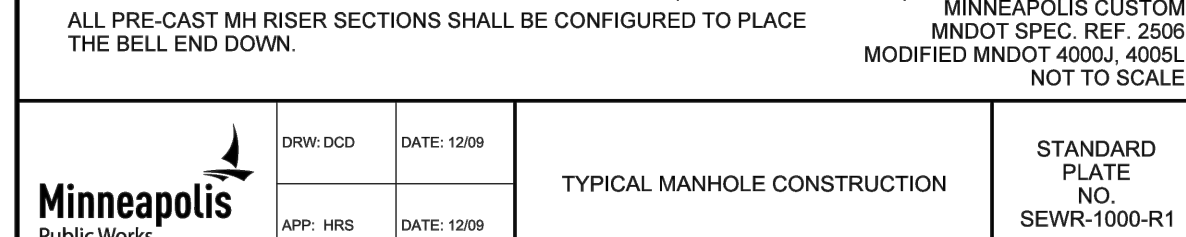
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|  | DRW: DCD | DATE: 12/02 | PVC PIPE STANDARDS | STANDARD PLATE NO. SEWR-4015 |
| | APP: HRS | DATE: 12/06 | | |



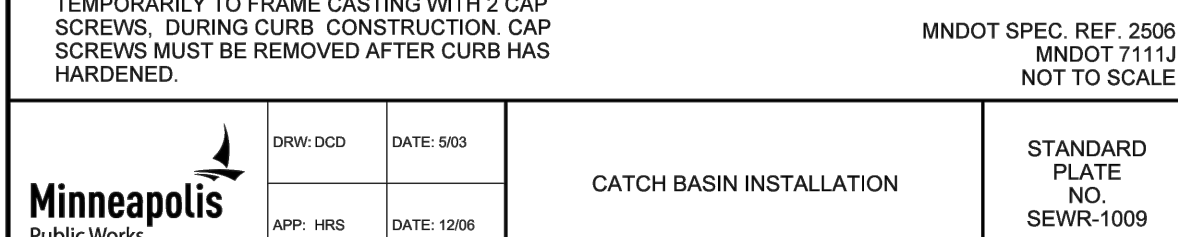
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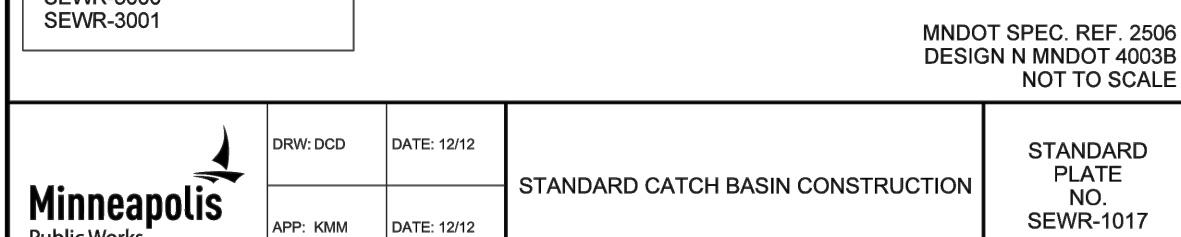
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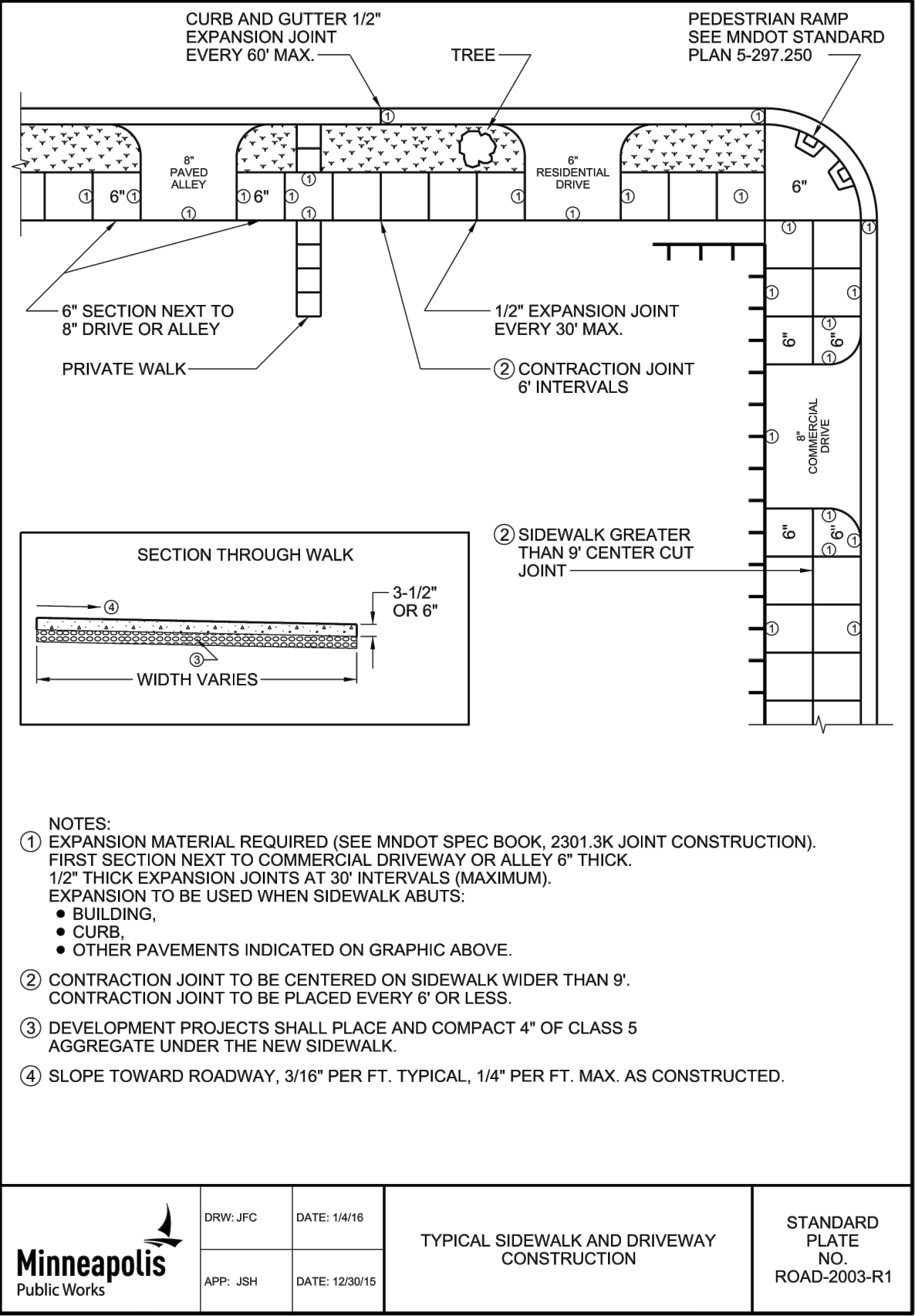
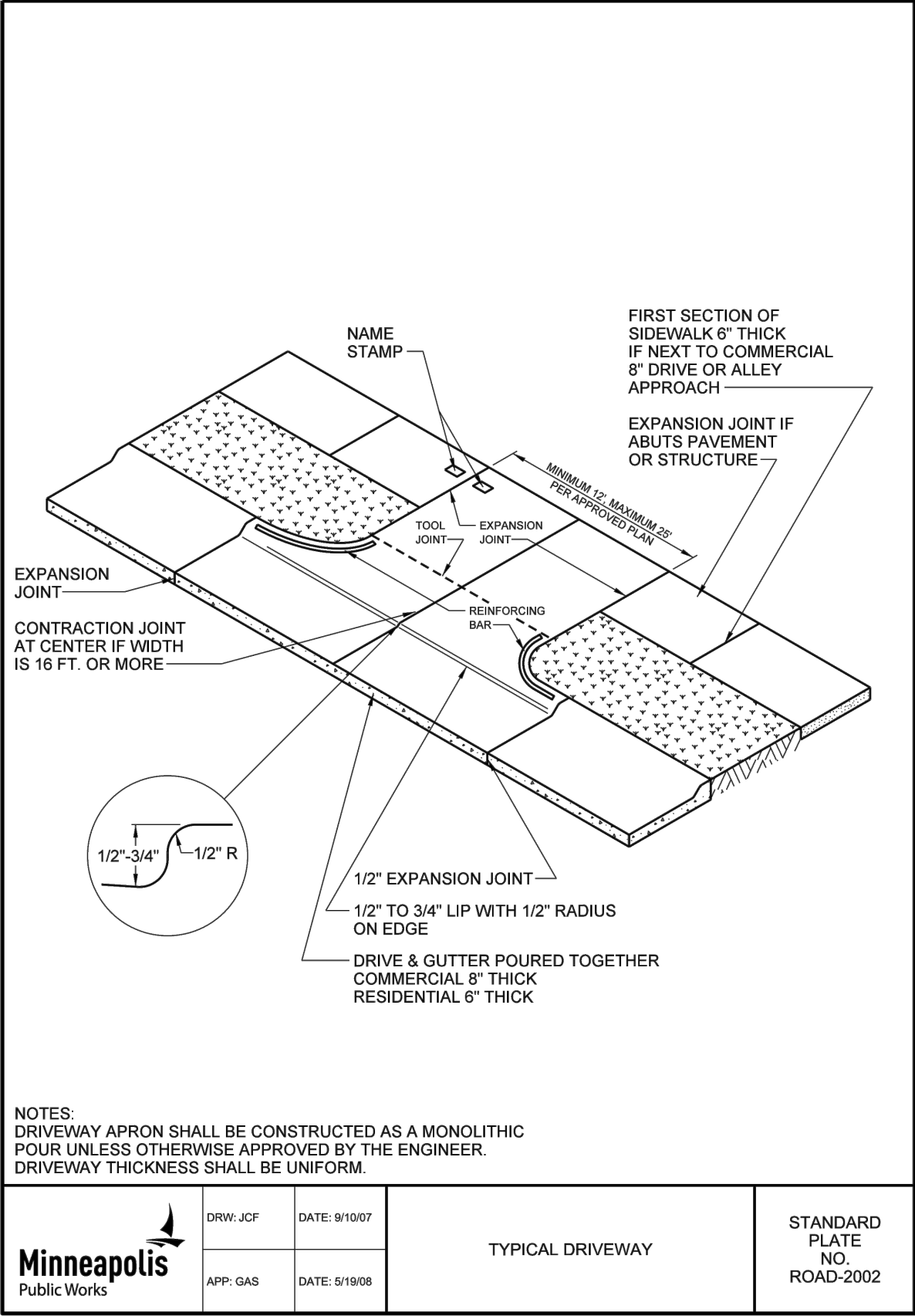
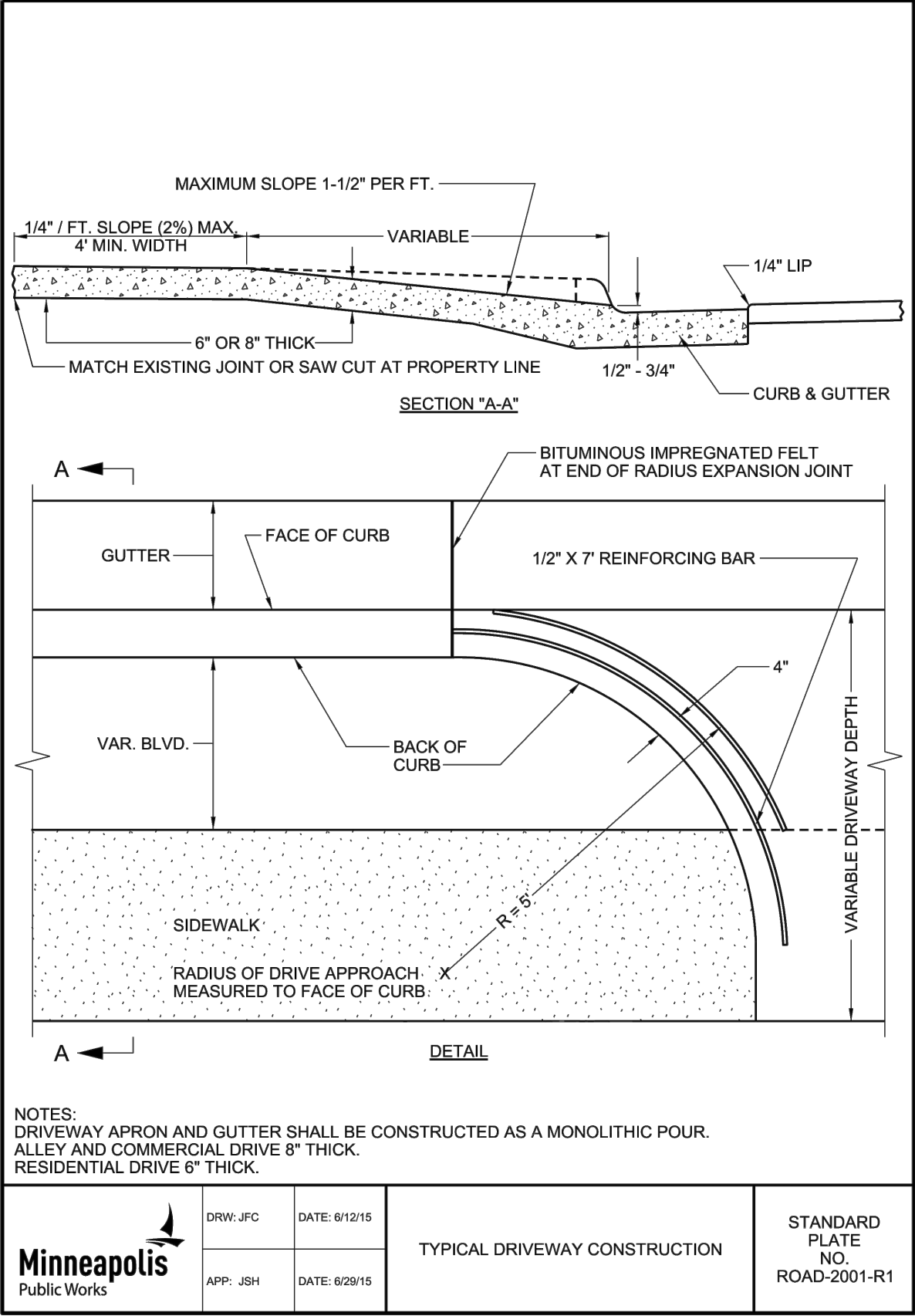
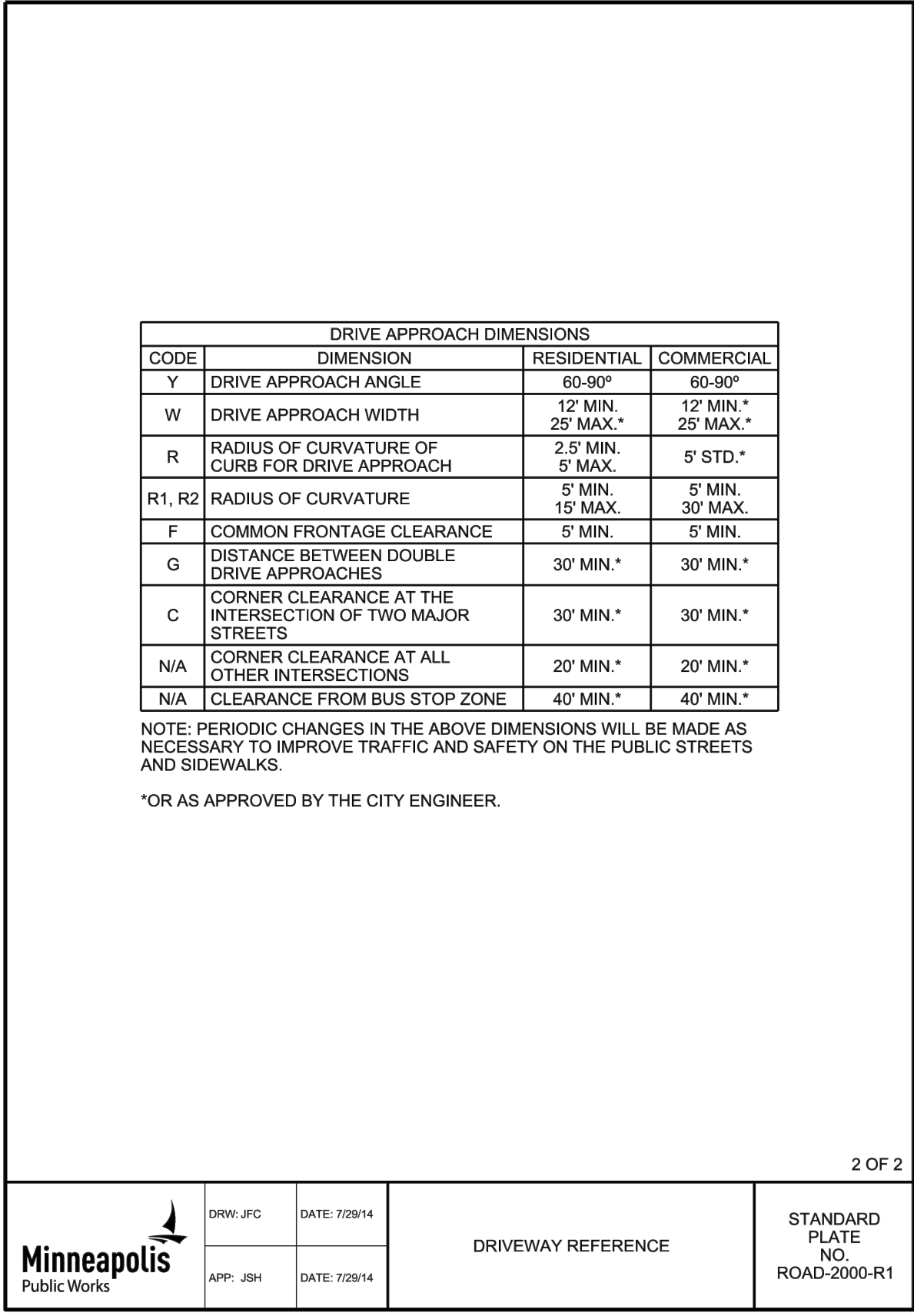
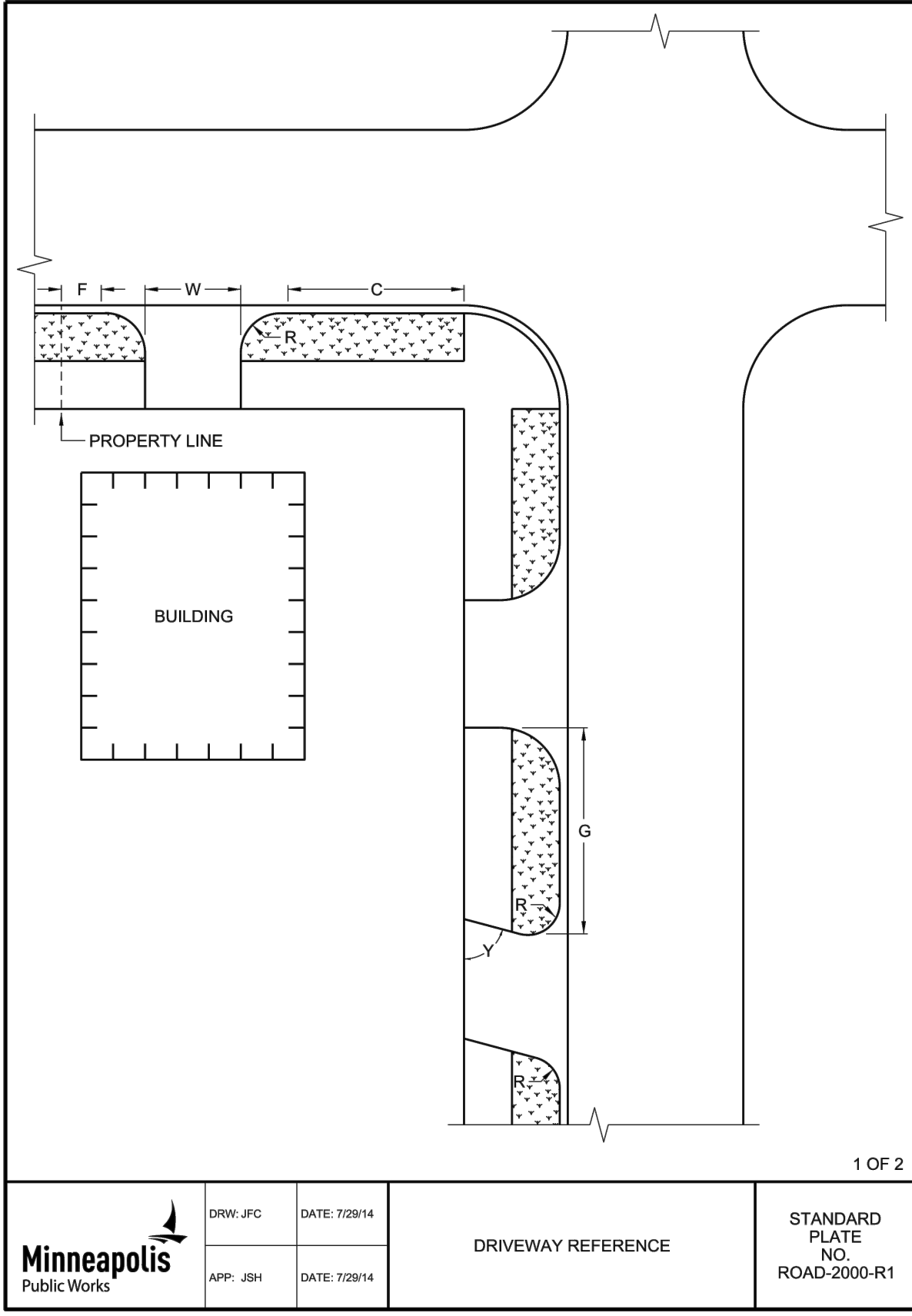
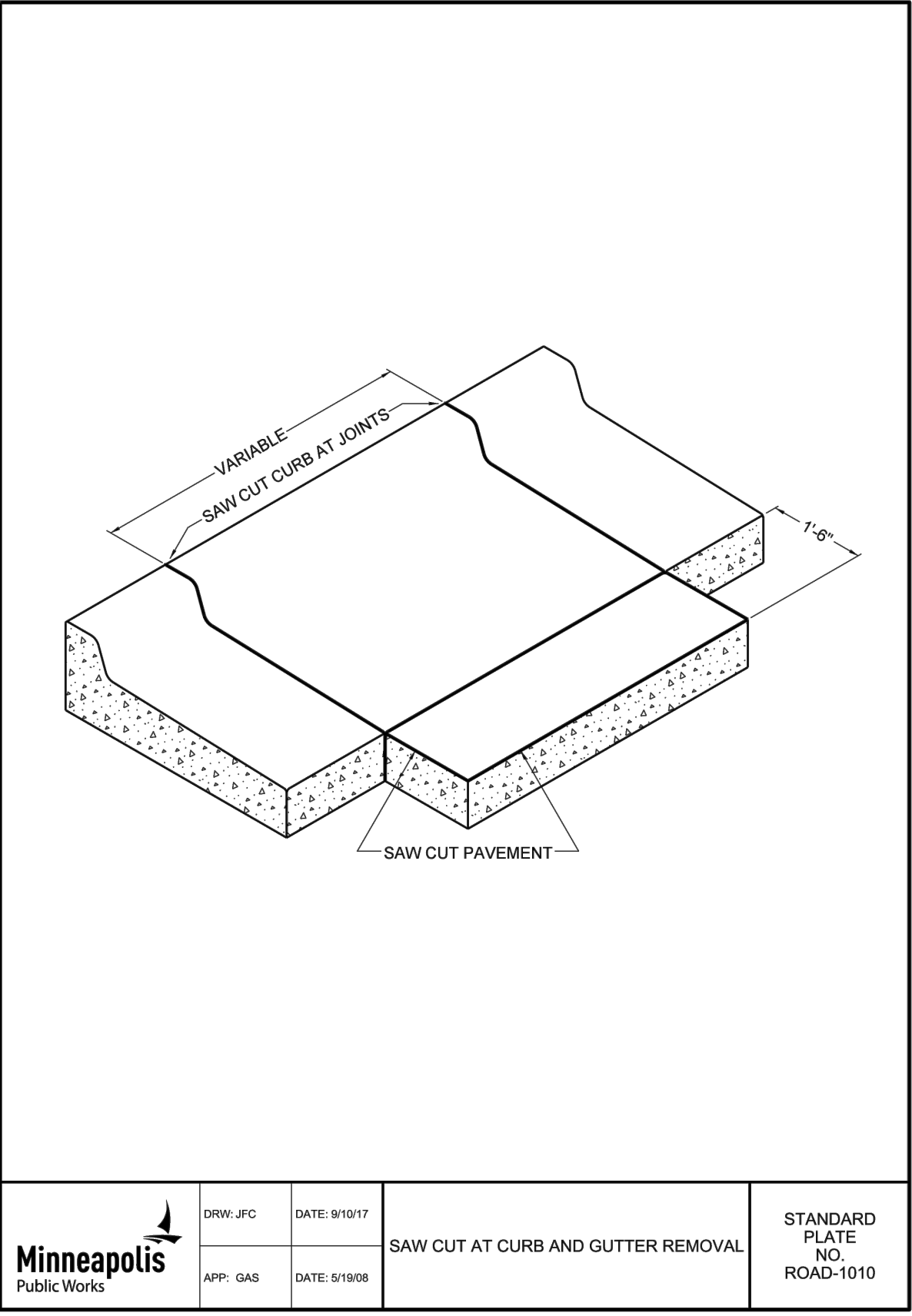
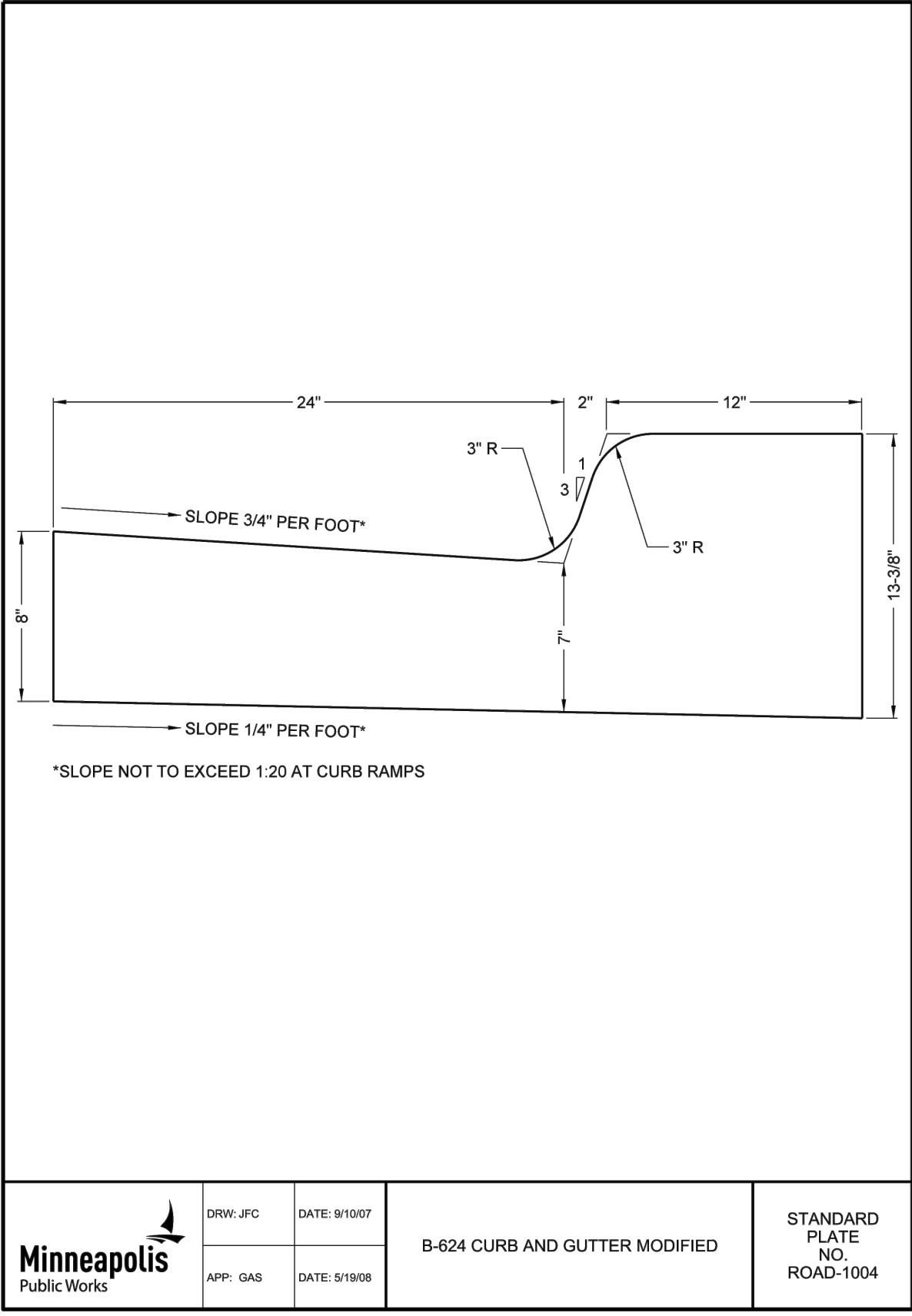
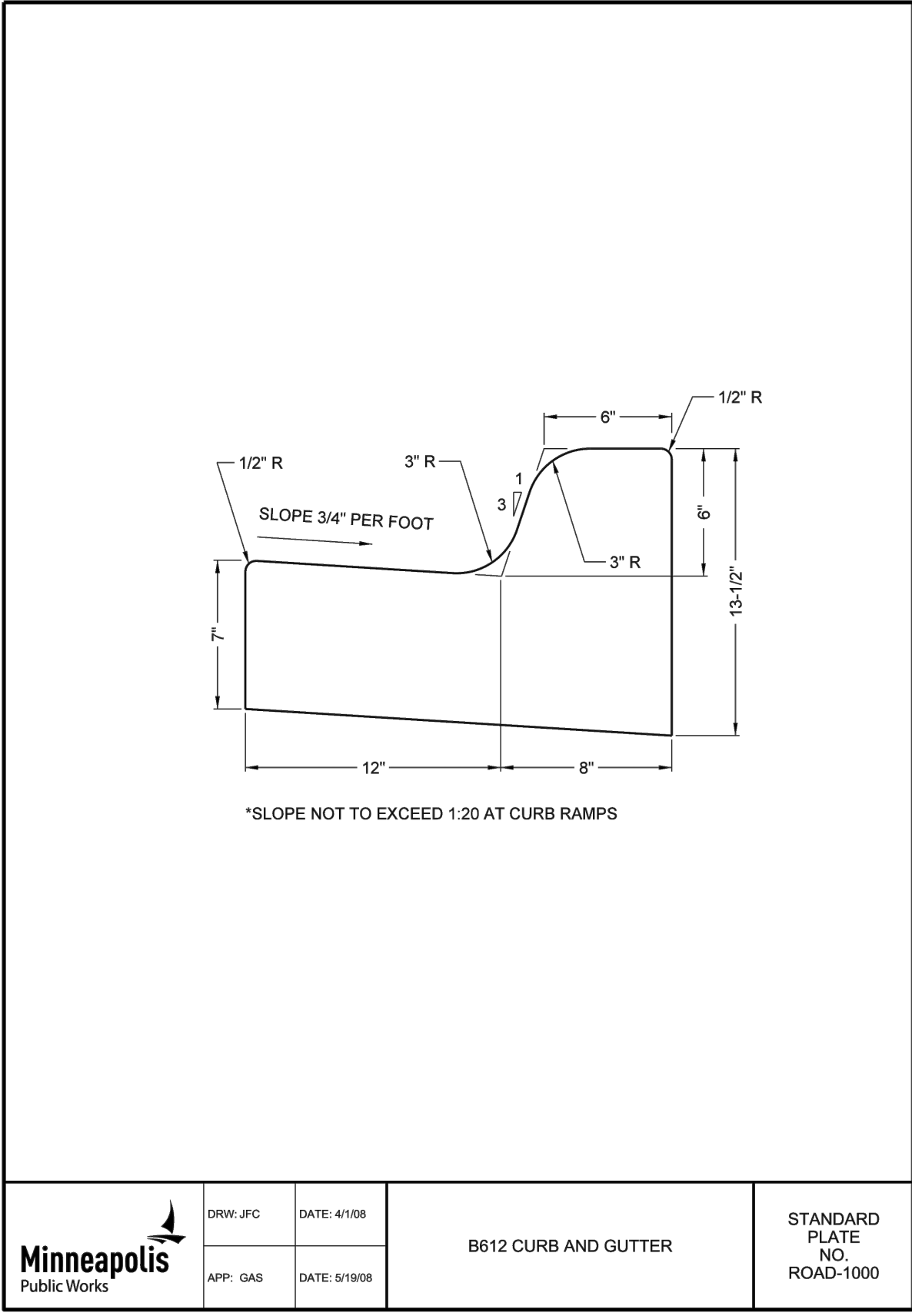
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| COMMISSION NUMBER | 2272.02 |

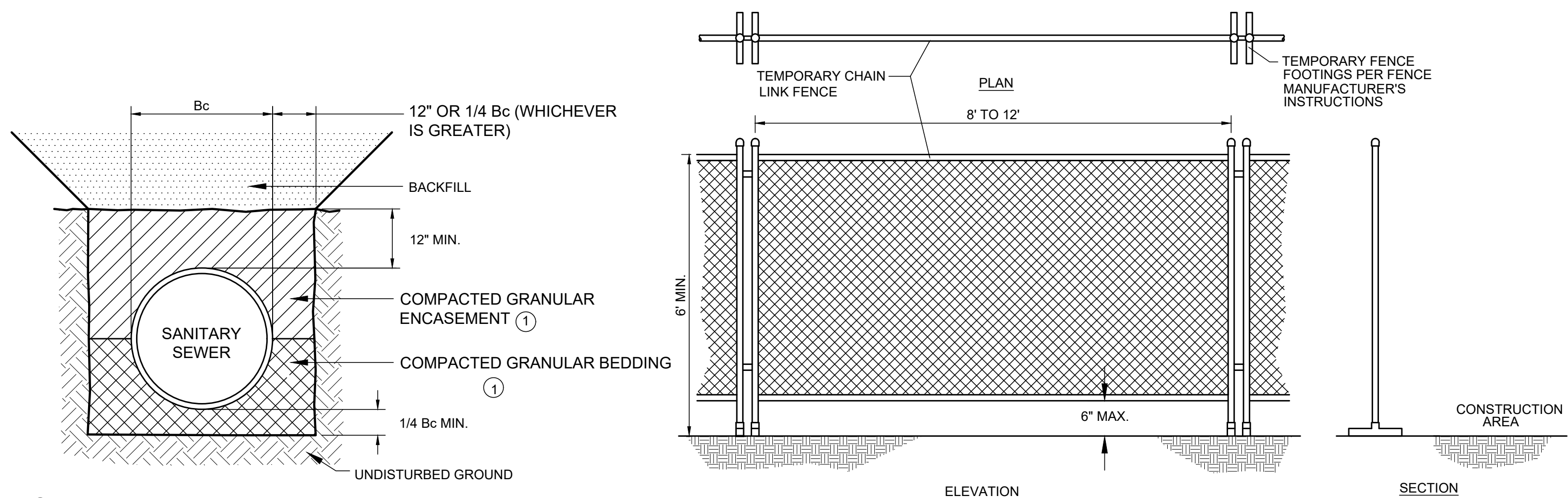
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CIVIL DETAILS

C700



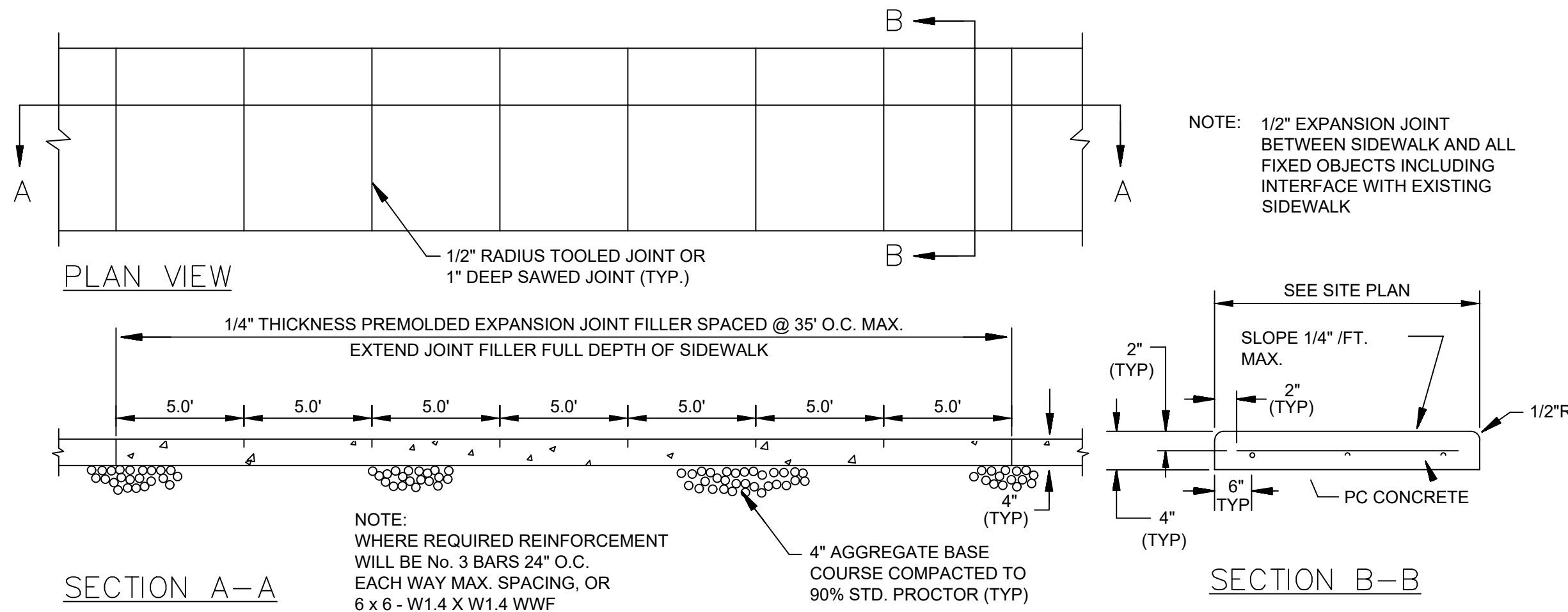
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① GRANULAR BEDDING AND ENCASEMENT SHALL CONFORM TO THE GRADATION REQUIREMENTS IDENTIFIED IN THE PROJECT SPECIFICATIONS. ALL BEDDING AND ENCASEMENT SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PIPE.

PIPE BEDDING (CLASS B) SANITARY SEWER

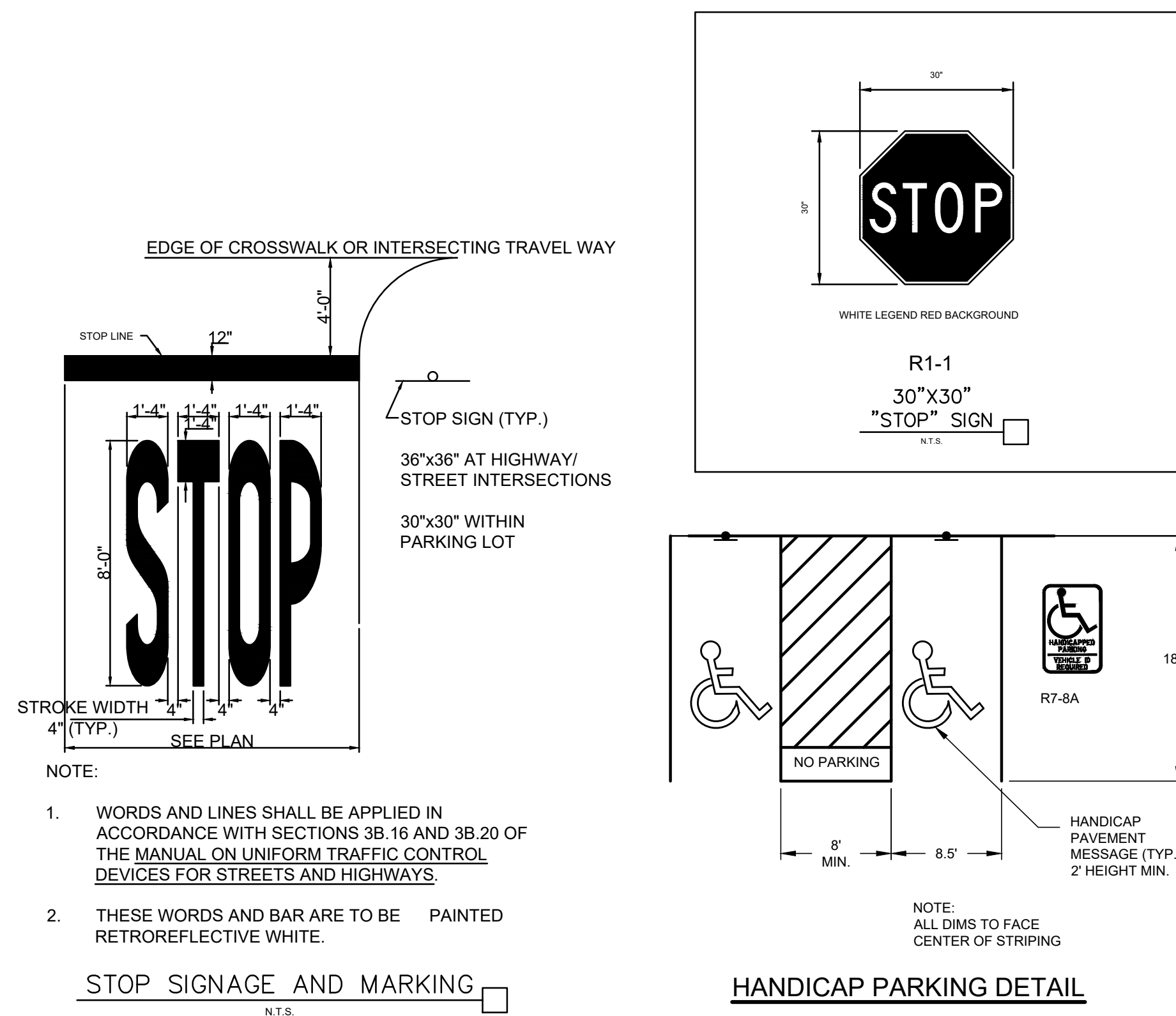
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NOTE: WHERE REQUIRED REINFORCEMENT WILL BE NO. 3 BARS 24" O.C. EACH WAY MAX. SPACING, OR 6 x 6 - W1.4 X W1.4 WWF

SUBGRADE:
FRONT BUILDING SIDEWALKS: SUBCUT EXTENT OF SIDEWALK TO FOOTING GRADE, BACKFILL WITH CLEAN SAND AND A 3:1 TRANSITION ZONE
SIDE BUILDING SIDEWALKS: SUBCUT TO ALLOW FOR 12" CLEAN SAND BENEATH AGGREGATE BASE

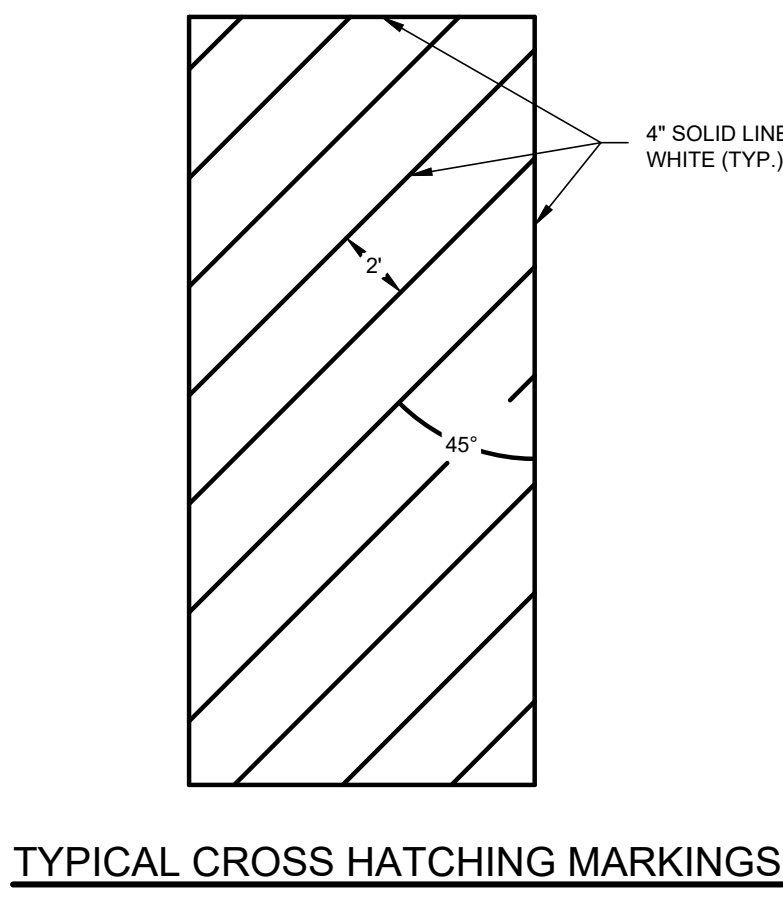
CONCRETE SIDEWALK
N.T.S.



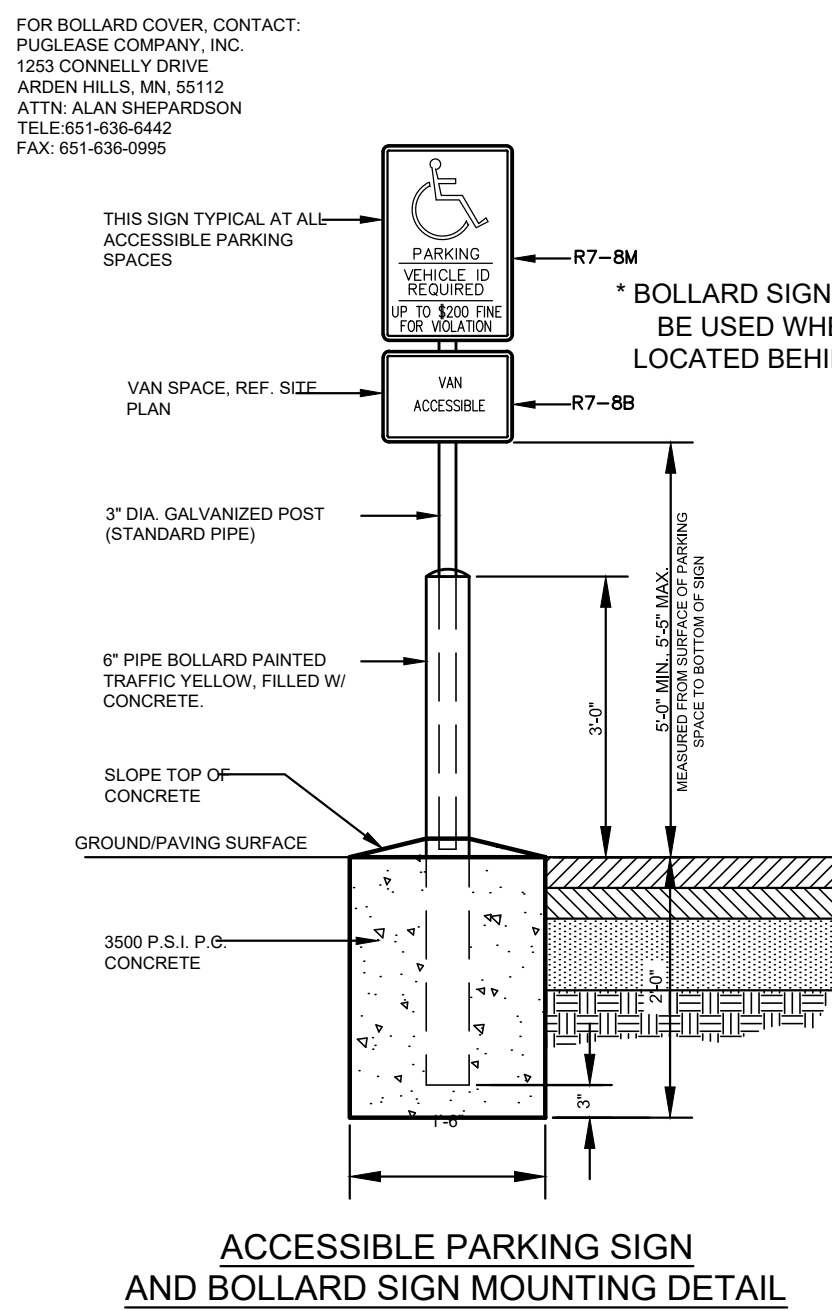
- WORDS AND LINES SHALL BE APPLIED IN ACCORDANCE WITH SECTIONS 3B.16 AND 3B.20 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.
- THESE WORDS AND BAR ARE TO BE PAINTED RETROREFLECTIVE WHITE.

STOP SIGNAGE AND MARKING
N.T.S.

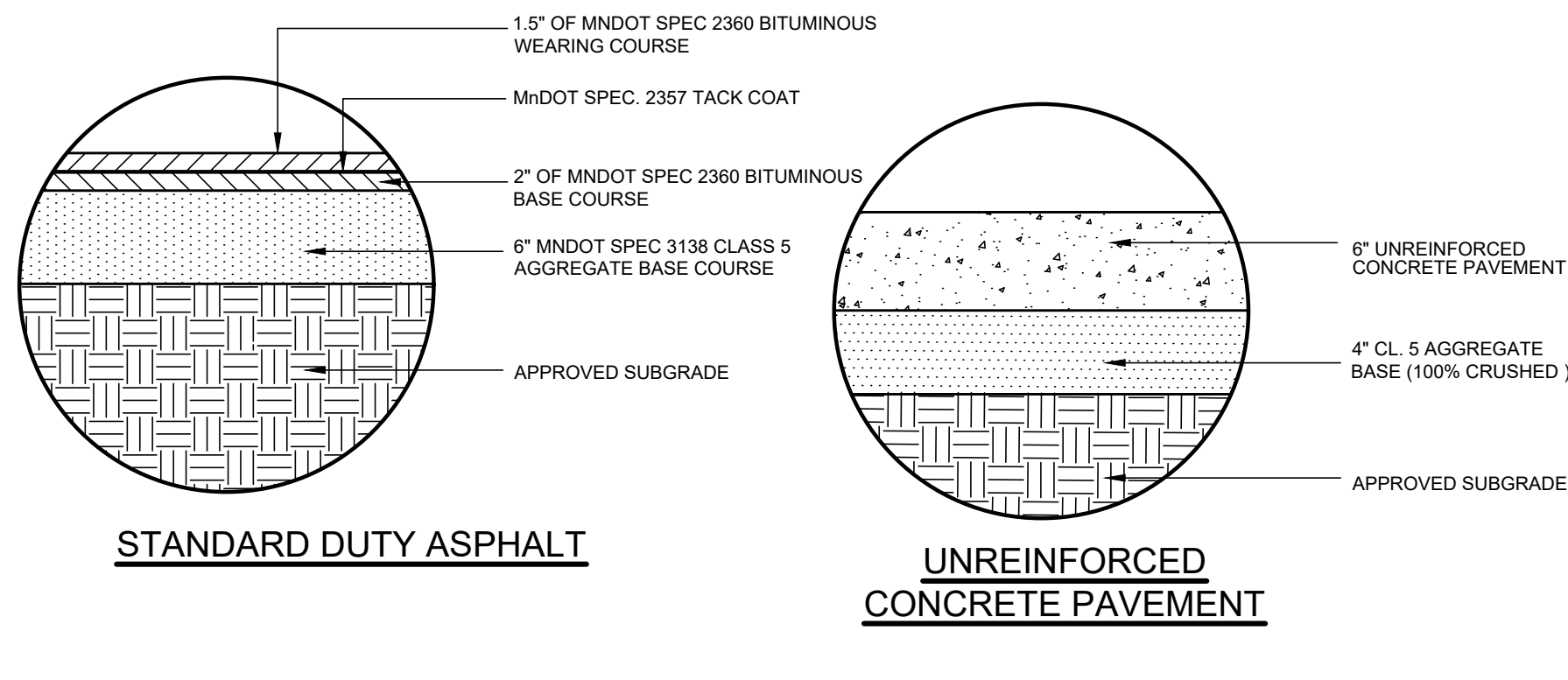
HANDICAP PARKING DETAIL



TYPICAL CROSS HATCHING MARKINGS

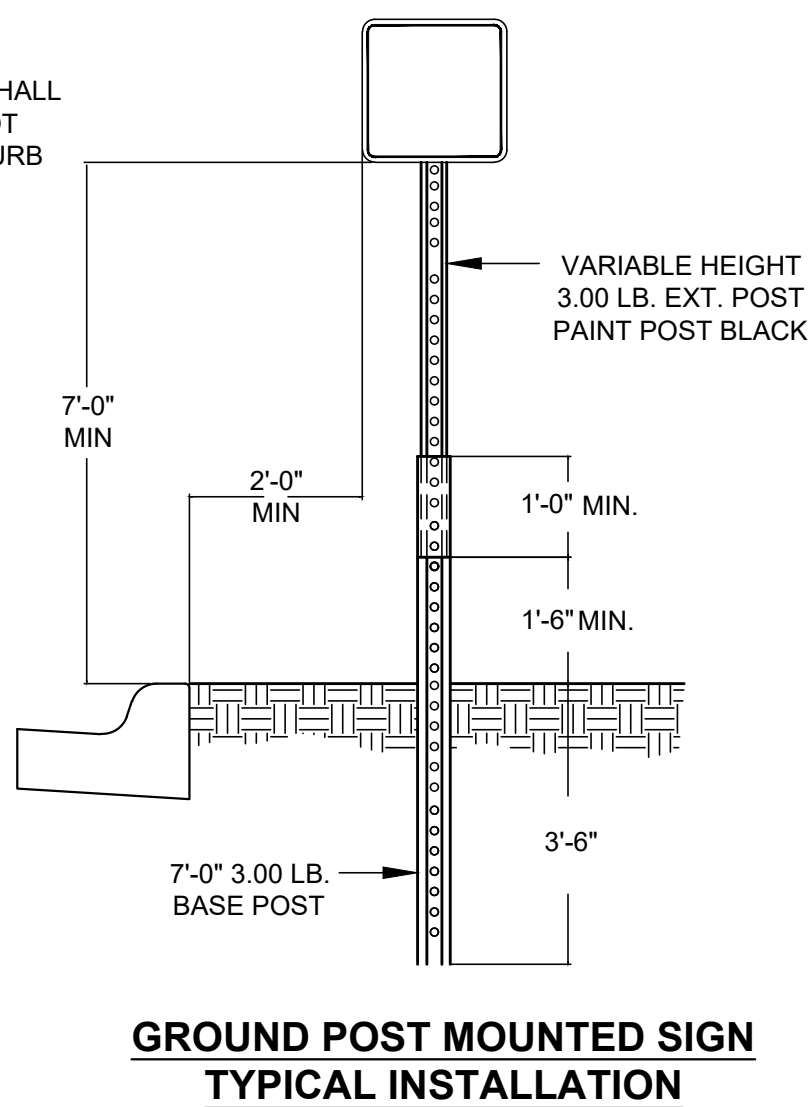


ACCESSIBLE PARKING SIGN
AND BOLLARD SIGN MOUNTING DETAIL



STANDARD DUTY ASPHALT

UNREINFORCED
CONCRETE PAVEMENT



GROUND POST MOUNTED SIGN
TYPICAL INSTALLATION

| NOMINAL FITTING SIZE, INCHES | TEE, WYE, PLUG OR CAP | 90° BEND PLUGGED CROSS | TEE PLUGGED ON RUN | | 45° BEND | 22 1/2° BEND | 11 1/4° BEND |
|------------------------------|-----------------------|------------------------|--------------------|------|----------|--------------|--------------|
| | | | A 1 | A 2 | | | |
| 4 | 1.0 | 1.4 | 1.9 | 1.4 | 1.0 | - | - |
| 6 | 2.1 | 3.0 | 4.3 | 3.0 | 1.6 | 1.0 | - |
| 8 | 3.5 | 5.3 | 7.5 | 5.4 | 2.9 | 1.5 | 1.0 |
| 10 | 5.9 | 8.4 | 11.8 | 8.4 | 4.6 | 2.6 | 1.2 |
| 12 | 8.5 | 12.0 | 17.0 | 12.0 | 6.6 | 3.4 | 1.7 |
| 14 | 11.5 | 16.3 | 23.0 | 16.3 | 8.9 | 4.6 | 2.3 |
| 16 | 15.0 | 21.3 | 30.0 | 21.3 | 11.5 | 6.0 | 3.0 |
| 18 | 19.0 | 27.0 | 38.0 | 27.0 | 14.6 | 7.6 | 3.8 |
| 20 | 23.5 | 33.3 | 47.0 | 33.3 | 18.1 | 9.4 | 4.7 |
| 24 | 34.0 | 48.0 | 68.0 | 48.0 | 26.2 | 13.6 | 6.8 |

NOTE: ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 P.S.I. AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:
BEARING AREA=(TEST PRESSURE/150)(2000/SOIL BEARING STRESS)(TABLE VALUE)

- NOTES:
- CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
 - KEEP CONCRETE CLEAR OF JOINTS AND ACCESSORIES.
 - IF NOT SHOWN ON PLANS, REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED ABOVE. ADJUST IF NECESSARY TO CONFORM TO THE TEST PRESSURES AND ALLOWABLE SOIL BEARING STRESSES.
 - BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN IN THIS STANDARD DETAIL.

WATERMAIN THRUST BLOCKING

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2020 KIMLEY-HORN AND ASSOCIATES, INC.
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PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

PROJECT TITLE

3939 E 46TH
STREET - PHASE II
RESIDENTIAL

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| 1 | 08/07/20 | PDR SUBMITAL |
| 2 | 10/09/20 | LUA SUBMITAL |

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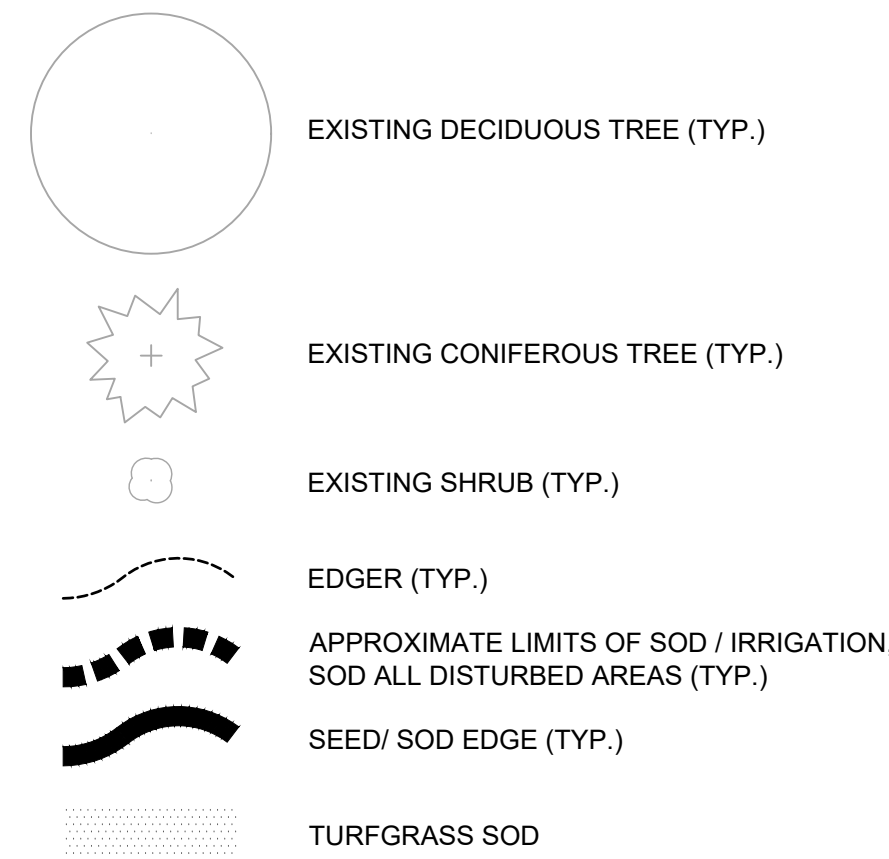
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LANDSCAPE LEGEND



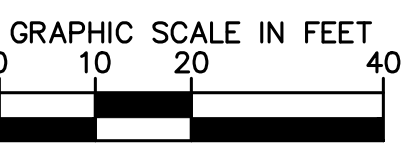
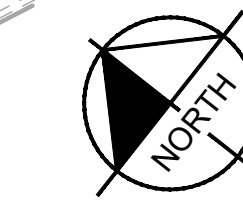
PROPOSED
BUILDING
L1 FFE: 825.50
P1 FFE: 814.50

CONTRACTOR SHALL PROVIDE AND
MAINTAIN ALL SEPARATION
DISTANCES REQUIRED BY XCEL
ENERGY AND OSHA REGULATIONS
FROM THE EXISTING OVERHEAD
TRANSMISSION LINES

BIKE RACK (7)
SEE DETAIL 6/L101

BENCH

NAWADAH BOULE
ALLEY

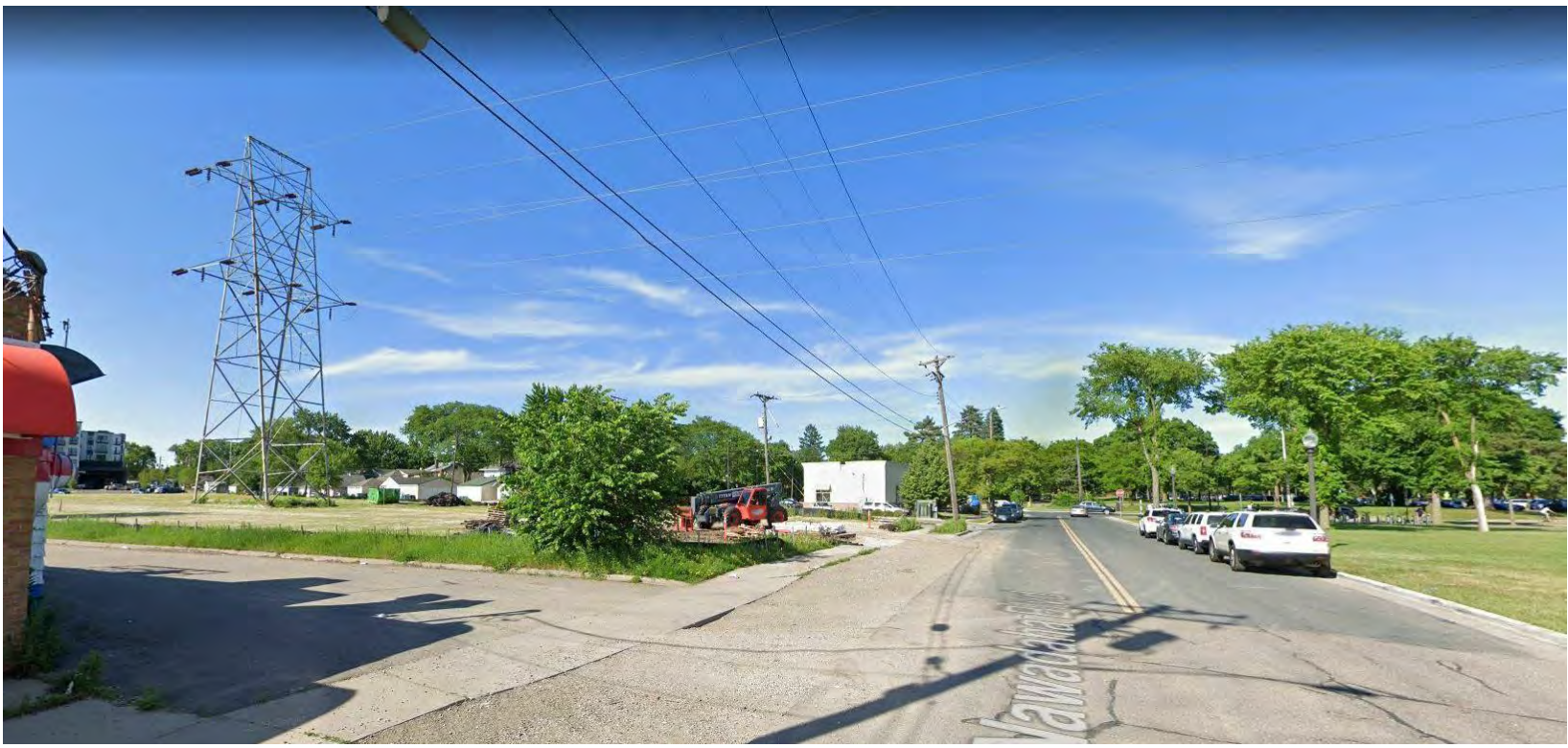
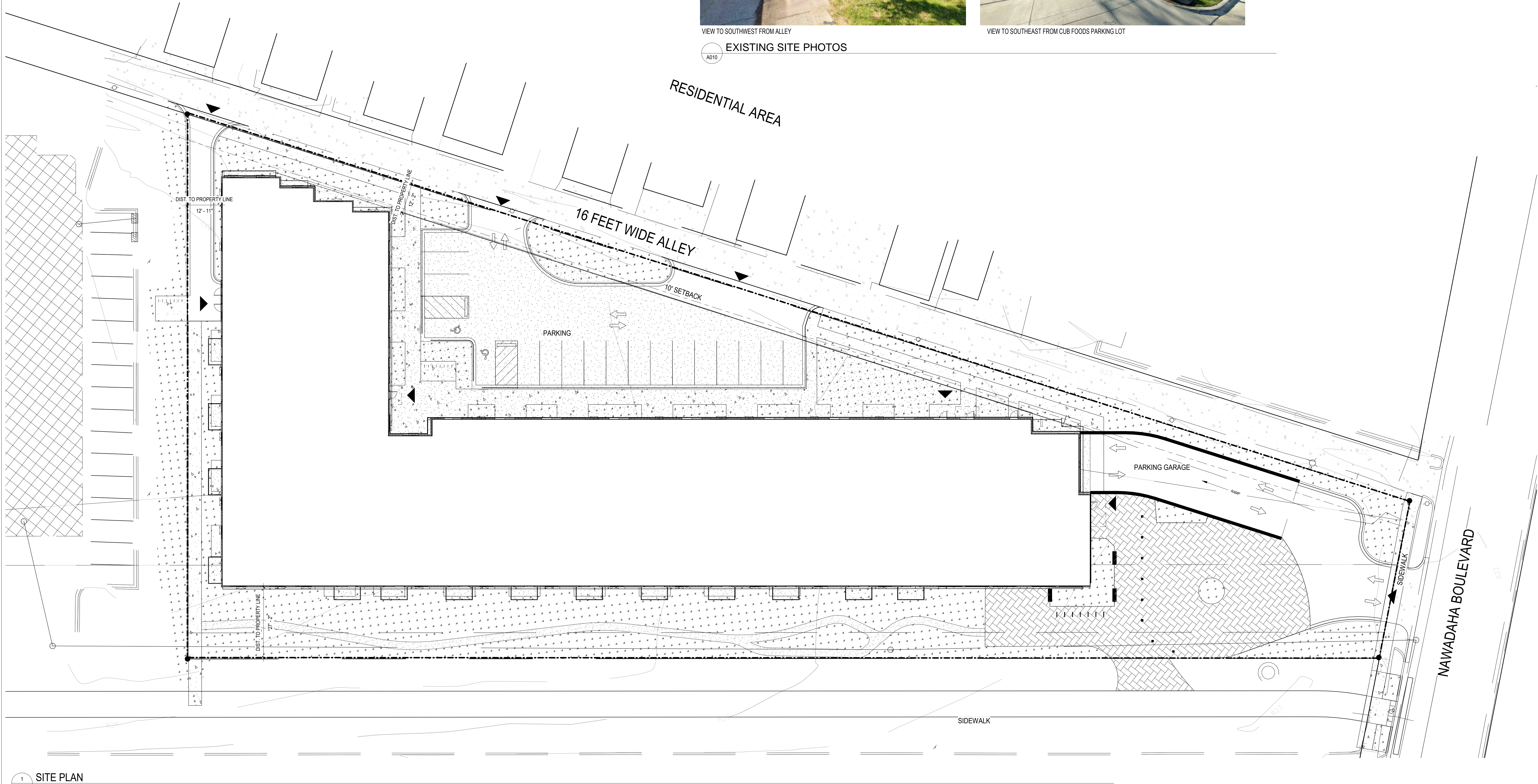


| TREES | CODE | QTY | BOTANICAL NAME | COMMON NAME | CONT | CAL |
|----------------|------|----------|--|-------------------------------|---------------------|-----|
| | BV | 3 | VIBURNUM PRUNIFOLIUM | BLACKHAW VIBURNUM | 1 3/4" CAL. | |
| | CC | 5 | MALUS X 'CANDYMINT' | CANDYMINT CRABAPPLE | 1 3/4" CAL. | |
| | CH | 3 | CELTIS OCCIDENTALIS | COMMON HACKBERRY | 2.5" CAL. | |
| | DK | 3 | GYMNOCALADUS DIOICA 'MOKBRANCHED' TM | DECAF KENTUCKY COFFEETREE | 2.5" CAL. | |
| | FS | 5 | MALUS SARGENTI 'SELECT A' TM | FIREBIRD SARGENT CRABAPPLE | 1 3/4" CAL. | |
| | NC | 1 | CATALPA SPECIOSA | NORTHERN CATALPA | 2.5" CAL. | |
| | QX | 5 | QUERCUS X 'CRIMSCHMIDT' | CRIMSON SPIRE OAK | B & B 2" CAL MIN | |
| | RF | 4 | CARPINUS CAROLINIANA 'UXBRIDGE' TM | RISING FIRE AMERICAN HORNBEAM | 1 3/4" CAL. | |
| | TH | 4 | CRATAEGUS CRUS-GALLI 'INERMIS' | THORNLESS HAWTHORN | 1 3/4" CAL. | |
| SHRUB AREAS | CODE | QTY | BOTANICAL NAME | COMMON NAME | SPACING | |
| | FSS | 69 | SPIRAEA JAPONICA | FIRELIGHT SPIREA | 36" o.c. | |
| | GCJ | 123 | JUNIPERUS VIRGINIANA 'GREGUARD' TM | GREY GUARDIAN JUNIPER | 36" o.c. | |
| | GHA | 22 | ARONIA MELANOCARPA 'UCONNAM012' TM | GROUND HOG CHOKEBERRY | 36" o.c. | |
| | LLH | 63 | HYDRANGEA PANICULATA 'JANE' TM | LITTLE LIME HYDRANGEA | 36" o.c. | |
| | LQH | 25 | HYDRANGEA PANICULATA 'LITTLE QUICK FIRE' | LITTLE QUICK FIRE HYDRANGEA | 36" o.c. | |
| | MDW | 115 | CORNUS RACEMOSA 'MUSZAM' | MUSKINGUM DOGWOOD | 36" o.c. | |
| | SAS | 109 | SORBARIA SORBIFOLIA 'SEM' | SEM ASH LEAF SPIREA | 36" o.c. | |
| | TYT | 56 | TAXUS X MEDIA 'TAUNTONII' | TAUNTON'S YEW | 36" o.c. | |
| PERENNIAL AREA | CODE | QTY | BOTANICAL NAME | COMMON NAME | SPACING | |
| | AS2 | 73 | ACHILLEA MILLEFOLIUM 'SAUCY SEDUCTION' | SAUCY SEDUCTION COMMON YARROW | 18" o.c. | |
| | AT2 | 35 | ASCLEPIAS TUBEROSA | BUTTERFLY MILKWEED | 30" o.c. | |
| | AW | 39 | ASTER DUMOSUS 'WOOD'S BLUE' | WOOD'S BLUE ASTER | 24" o.c. | |
| | AW2 | 3 | ASTER DUMOSUS 'WOOD'S PURPLE' | WOOD'S PURPLE ASTER | 24" o.c. | |
| | BA | 2 | BAPTISIA AUSTRALIS | BLUE WILD INDIGO | 48" o.c. | |
| | BIA | 24 | AMSONIA X 'BLUE ICE' | BLUE ICE BLUESTAR | 24" o.c. | |
| | CNR | 28 | NEPETA RACEMOSA 'LITTLE TITCH' | CATMINT | 24" o.c. | |
| | CZ | 96 | COREOPSIS VERTICILLATA 'ZAGREB' | ZAGREB THREAD LEAF COREOPSIS | 18" o.c. | |
| | EH | 63 | ECHINACEA X 'HOT PAPAYA' | HOT PAPAYA ECHINACEA | 18" o.c. | |
| | EP | 17 | EUPATORIUM MACULATUM 'PHANTOM' | PHANTOM JOE PYE WEED | 42" o.c. | |
| | FGM | 319 | MISCANTHUS SINENSIS 'PURPURESCENS' | FLAME GRASS | 24" o.c. | |
| | HLC | 56 | CHELONE 'HOT LIPS' | HOT LIPS TURTLEHEAD | 24" o.c. | |
| | LES | 52 | STACHYS MONIERA 'HUMMELO' | LAMB'S EAR | 24" o.c. | |
| | MR | 39 | MONARDA DIDYMA 'RASPBERRY WINE' | RASPBERRY WINE BEE BALM | 24" o.c. | |
| | PDS | 251 | SPOROBOLUS HETEROLEPIS | PRAIRIE DROPSEED | 24" o.c. | |
| | SBM | 63 | ALLIUM 'MILLENNIUM' | MILLENNIUM ALLIUM | 24" o.c. | |
| | SGL | 38 | LIATRIS SPICATA | SPIKE GAYFEATHER | 24" o.c. | |
| GROUND COVERS | CODE | QTY | BOTANICAL NAME | COMMON NAME | SPACING | |
| | SS2 | 2,306 SF | SOD | TURFGRASS | | |

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VIEW TO EAST FROM NAWADAH BOULEVARD



VIEW TO NORTH FROM NAWADAH



VIEW TO SOUTHWEST FROM ALLEY

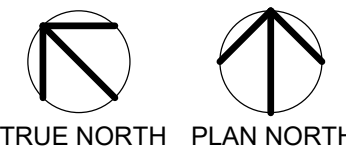


VIEW TO SOUTHEAST FROM CUB FOODS PARKING LOT

EXISTING SITE PHOTOS



1
A010
SITE PLAN
1/16" = 1'-0"



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SHEET TITLE

SITE PLAN

SHEET NUMBER

A010

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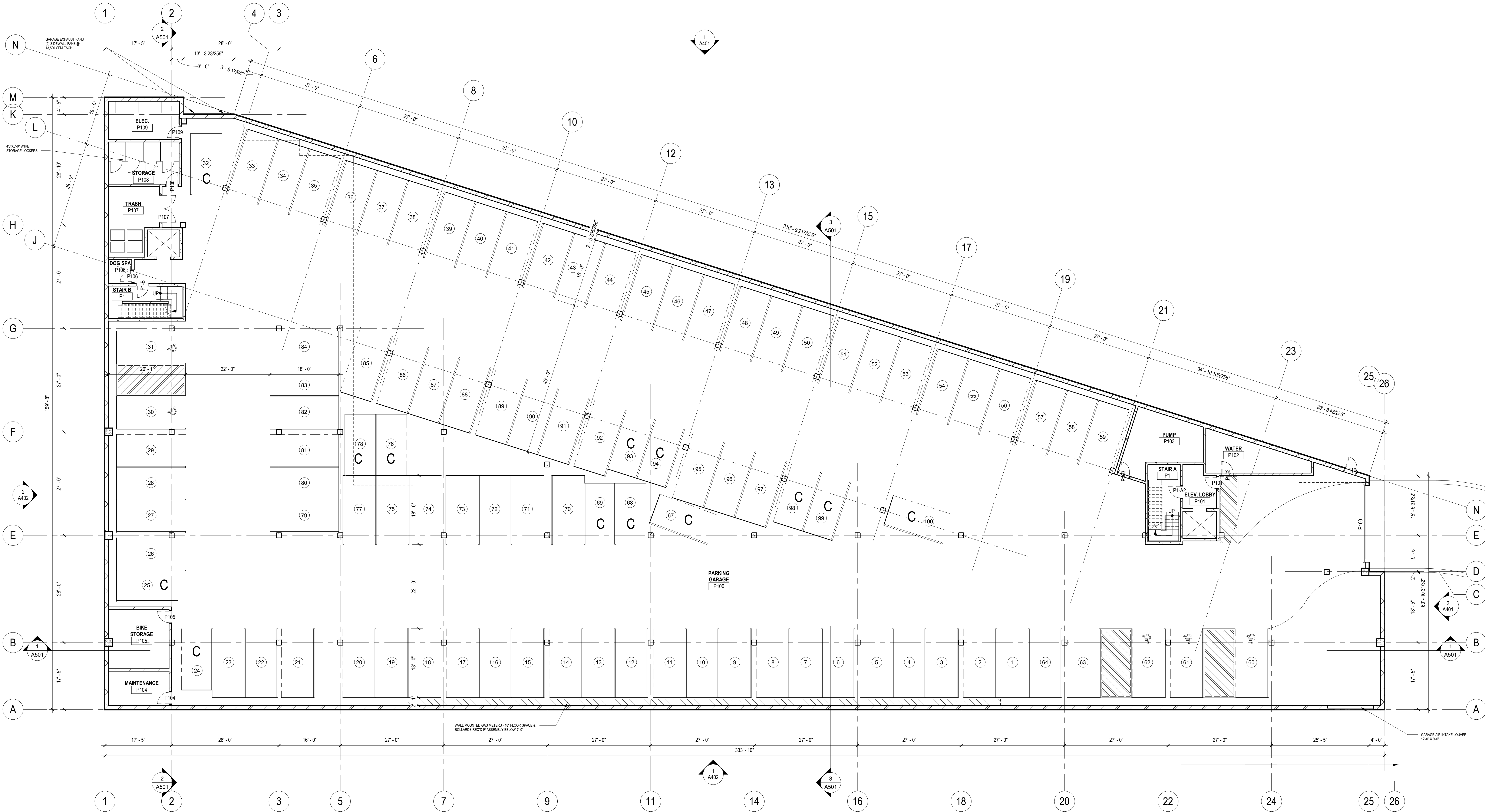
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LEVEL P1 FLOOR
PLAN

SHEET NUMBER

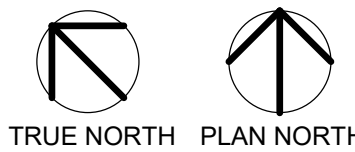
A099

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| PARKING SCHEDULE | |
|------------------|-----------------------------|
| Count | Type |
| 82 | 8' 6" x 18'-0" (90 deg) |
| 3 | 8' 6" x 18'-0" (90 deg) ADA |
| 13 | 8'-0" x 16'-0" (COMPACT) |
| 98 | |

1 LEVEL P1 FLOOR PLAN
A099 3/32" = 1'-0"



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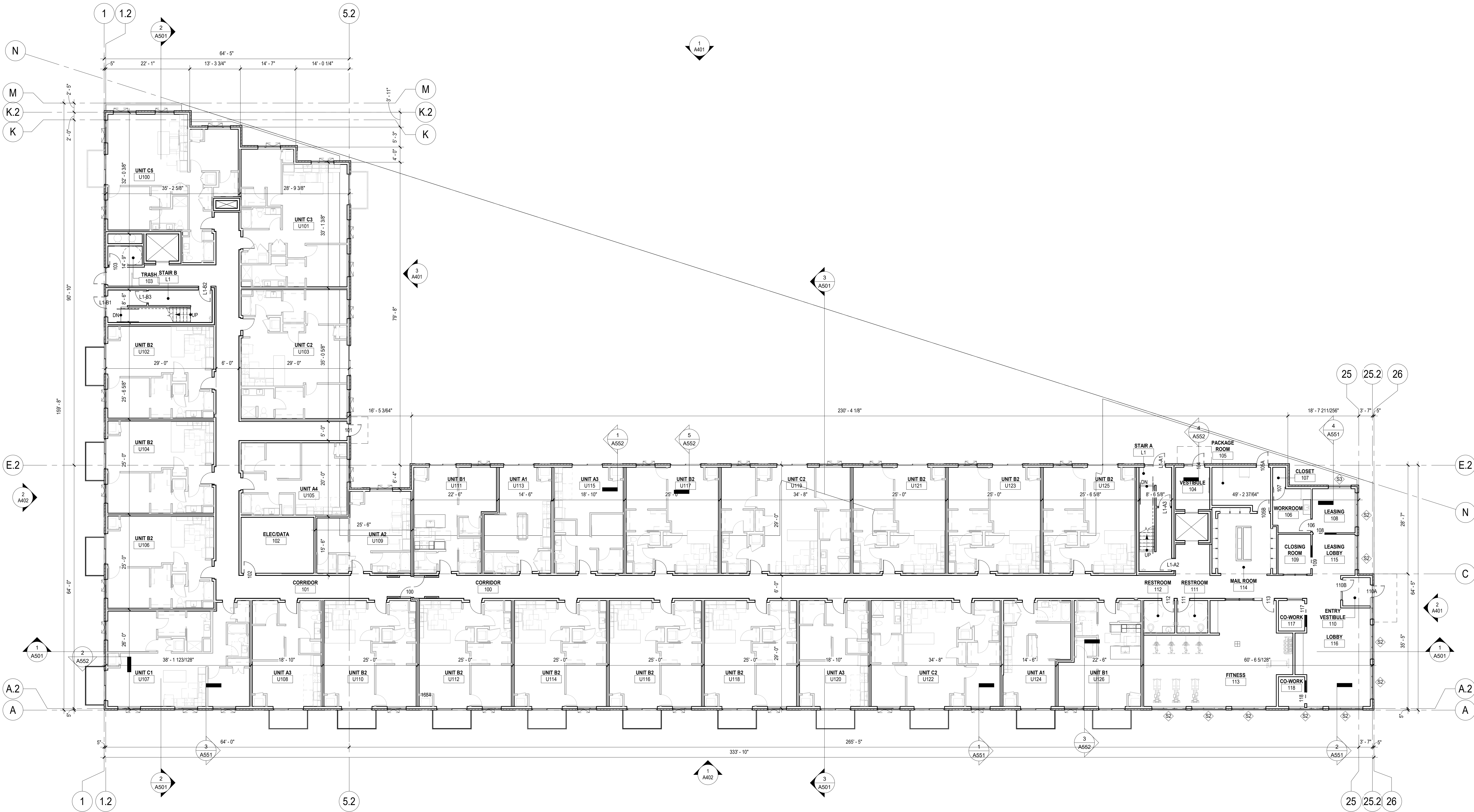
SHEET TITLE

LEVEL 1 FLOOR PLAN

SHEET NUMBER

A101

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1
A101

LEVEL 1 FLOOR PLAN
3/32" = 1'-0"

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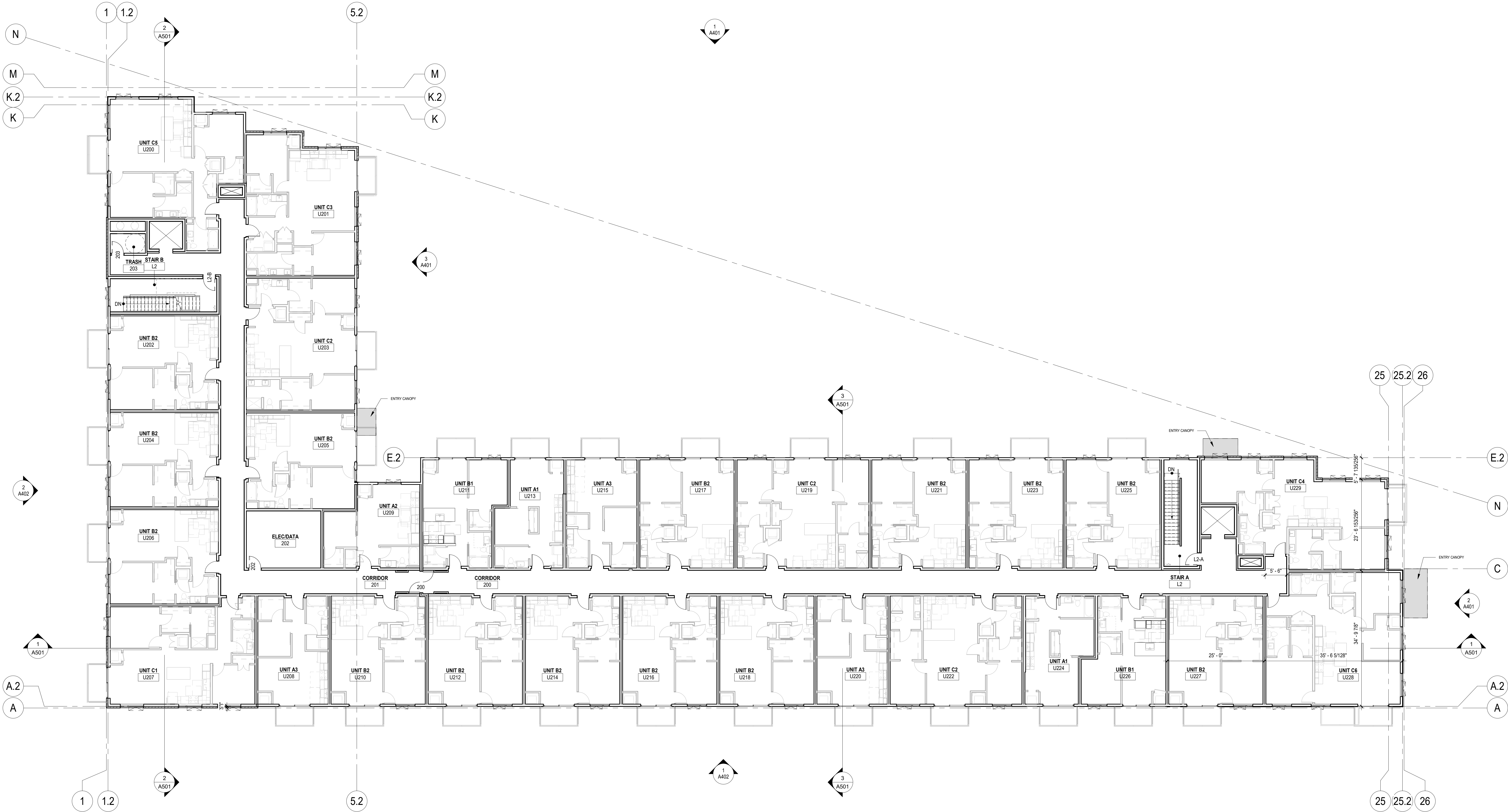
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LEVEL 2 FLOOR PLAN

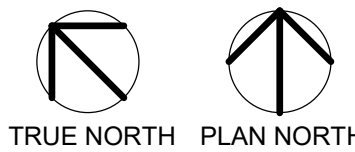
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A102

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1 LEVEL 2 FLOOR PLAN
3/32" = 1'-0"



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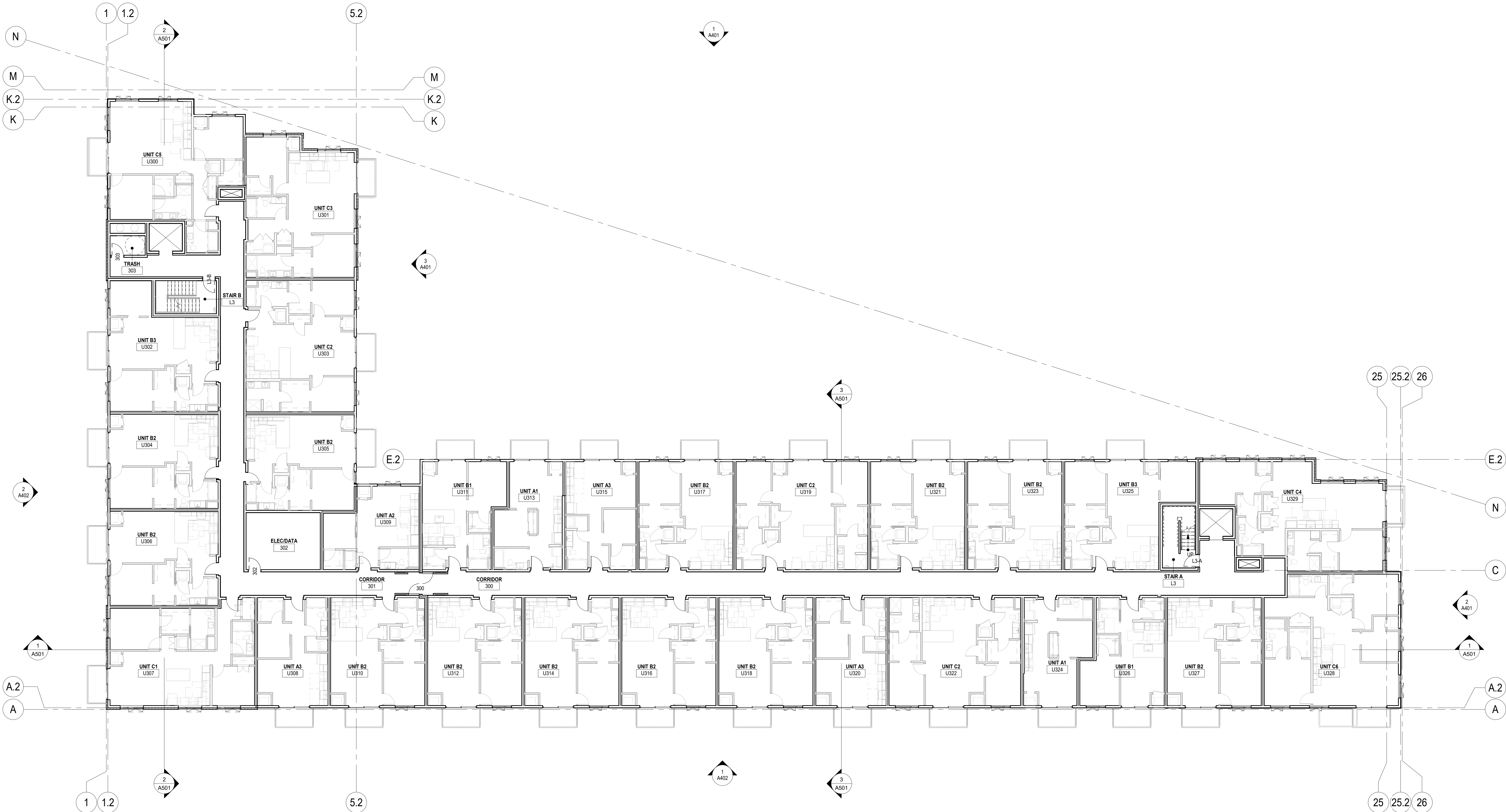
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LEVEL 3 FLOOR PLAN

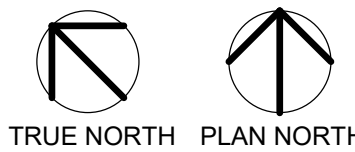
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1 LEVEL 3 FLOOR PLAN
3/32" = 1'-0"



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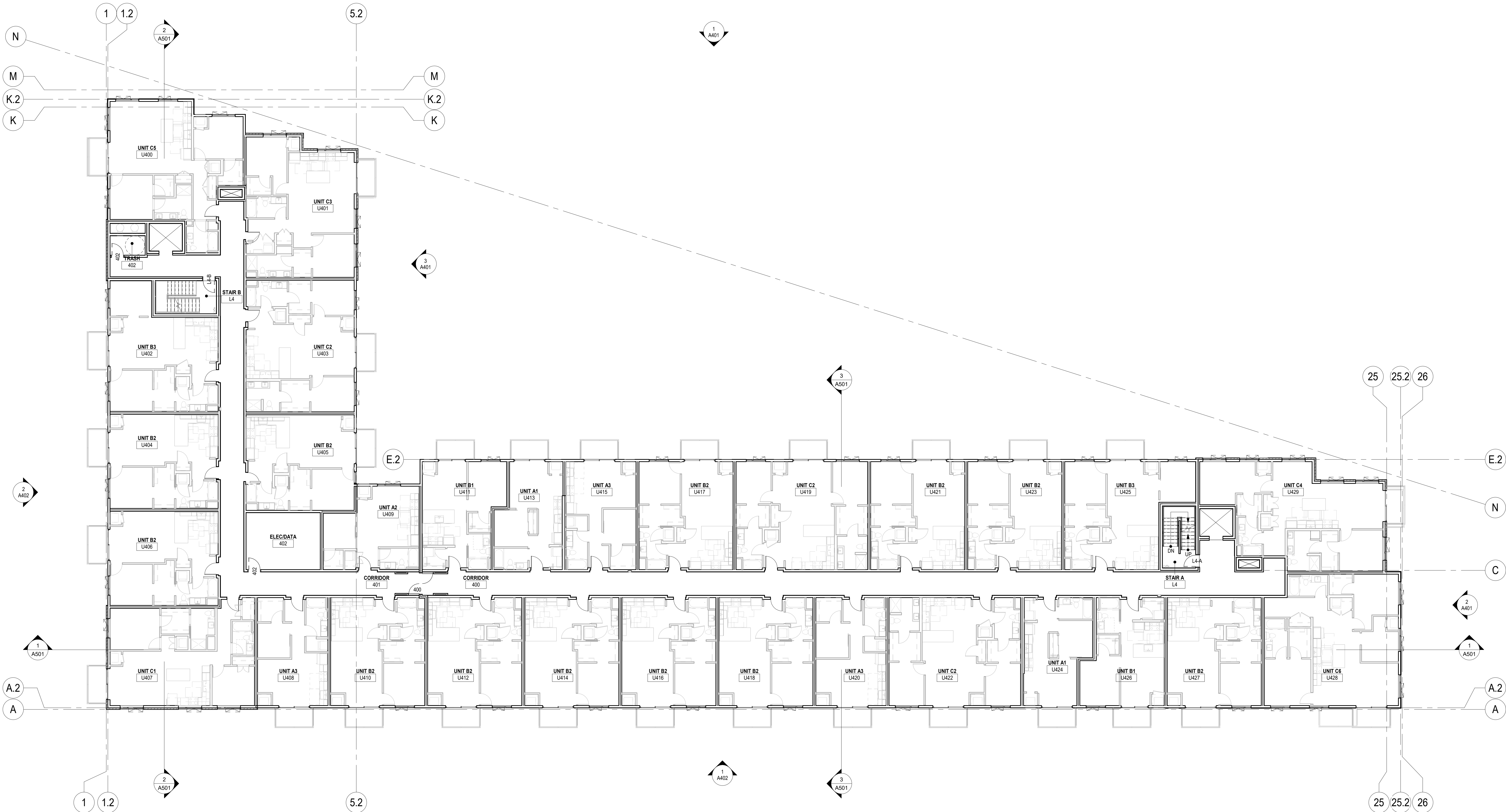
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LEVEL 4 FLOOR PLAN

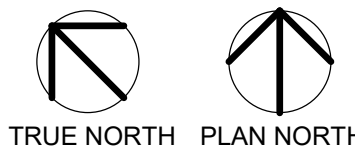
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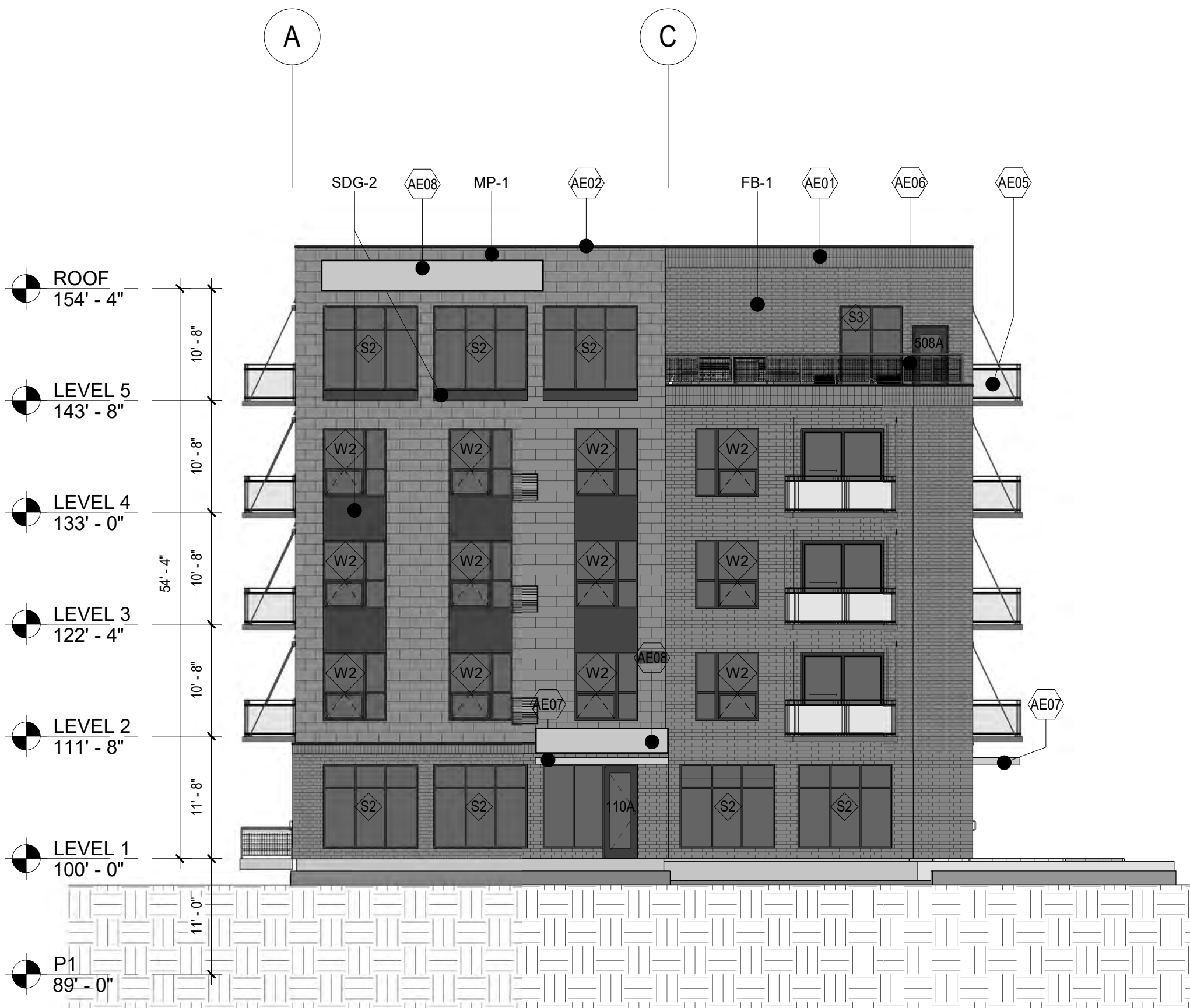
1 LEVEL 4 FLOOR PLAN
3/32" = 1'-0"



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1 NORTH ELEVATION
A401 3/32" = 1'-0"



2 EAST ELEVATION - 1
A401 3/32" = 1'-0"



3 EAST ELEVATION - 2
A401 3/32" = 1'-0"

- EXTERIOR ELEVATION KEYNOTES
- AE01 BRICK SOLDIER COURSING
 - AE02 PREFINISHED METAL COPING
 - AE03 FIBER CEMENT PANEL JOINT
 - AE04 MAGIC PACK LOUVERS
 - AE05 PREFINISHED ALUMINUM BALCONY'S (W/ GLASS PANELS)
 - AE06 PREFINISHED METAL RAILINGS
 - AE07 PREFINISHED METAL CANOPY (BASIS OF DESIGN: MAPES)
 - AE08 PROPOSED BUILDING SIGNAGE

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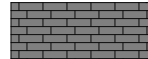



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| EXTERIOR MATERIAL LEGEND | |
|---|--|
|  | FB-1 FACE BRICK ENDICOTT - MANGANESE IRONSPOT TEXTURE: VELOUR SIZE: UTILITY STACKING: 1/3 RUNNING BOND |
|  | SDG-1 FIBER CEMENT PANEL - LIGHT GRAY JAMES HARDIE REVEAL PANEL SYSTEM PREFINISHED PAINT - SW 7004, SNOWBOUND TEXTURE: SMOOTH |
|  | SDG-2 FIBER CEMENT PANEL - DARK GRAY JAMES HARDIE REVEAL PANEL SYSTEM PREFINISHED PAINT - SW 7069, IRON ORE TEXTURE: SMOOTH |
|  | MP-1 METAL PANEL - COLOR WESTERN STATES METAL ROOFING - CUSTOM FLAT LOOK PANEL PANEL SIZE - 1' - 4" X 2' - 8" TEXTURE: OPTION 1 - WEATHERED METALLIC OPTION 2 - GREEN COPPER OPTION 3 - CORTEN A2P RAW |

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EXTERIOR
ELEVATIONS

SHEET NUMBER

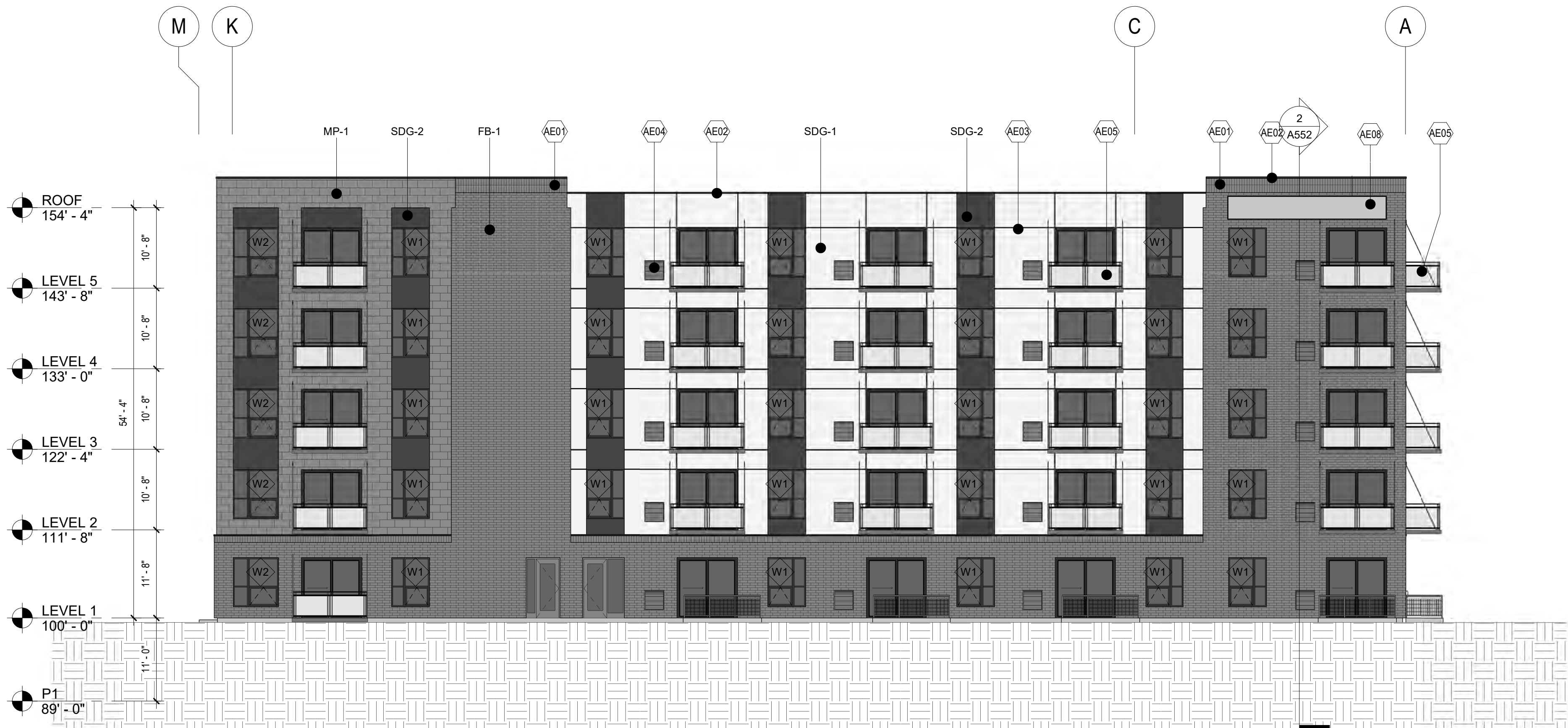
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1 SOUTH ELEVATION
A402 3/32" = 1'-0"



2 WEST ELEVATION
A402 3/32" = 1'-0"

| EXTERIOR ELEVATION KEYNOTES | |
|-----------------------------|---|
| AE01 | BRICK SOLDIER COURSING |
| AE02 | PREFINISHED METAL COPING |
| AE03 | FIBER CEMENT PANEL JOINT |
| AE04 | MAGIC PACK LOUVERS |
| AE05 | PREFINISHED ALUMINUM BALCONY'S (W/ GLASS PANELS) |
| AE07 | PREFINISHED METAL CANOPY (BASIS OF DESIGN: MAPES) |
| AE08 | PROPOSED BUILDING SIGNAGE |

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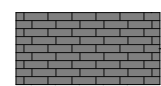


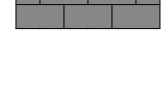
CONSULTANTS

PROJECT TITLE

LOWA

| ISSUE # | DATE | DESCRIPTION |
|---------|------------|----------------------|
| | 08/17/2020 | SD SET |
| | 10/06/2020 | LAND USE APPLICATION |

EXTERIOR MATERIAL LEGEND

| | | |
|---|-------|---|
|  | FB-1 | FACE BRICK ENDICOTT - MANGANESE IRONSPOT TEXTURE: VELOUR SIZE: UTILITY STACKING: 1/3 RUNNING BOND |
|  | SDG-1 | FIBER CEMENT PANEL - LIGHT GRAY JAMES HARDIE REVEAL PANEL SYSTEM PREFINISHED PAINT - SW 7004, SNOWBOUND TEXTURE: SMOOTH |
|  | SDG-2 | FIBER CEMENT PANEL - DARK GRAY JAMES HARDIE REVEAL PANEL SYSTEM PREFINISHED PAINT - SW 7069, IRON ORE TEXTURE: SMOOTH |
|  | MP-1 | METAL PANEL - COLOR WESTERN STATES METAL ROOFING - CUSTOM FLAT LOCK PANEL PANEL SIZE - 1'-4" X 2'-8" TEXTURE: OPTION 1 - WEATHERED METALLIC OPTION 2 - GREEN COPPER OPTION 3 - CORTEN A2P RAW |

CERTIFICATION

NOT FOR
CONSTRUCTION

| | |
|-------------------|----------|
| DRAWN BY | Author |
| CHECKED BY | Checker |
| COMMISSION NUMBER | XXXX-XXX |

SHEET TITLE

EXTERIOR
ELEVATIONS

SHEET NUMBER

A402

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PROPOSED EXTERIOR MATERIAL PALETTE - PHASE 2



WEST ELEVATION



EAST ELEVATION



NORTH ELEVATION



SOUTH ELEVATION

CONSULTANTS

PROJECT TITLE

LOWA

| ISSUE # | DATE | DESCRIPTION |
|---------|------------|----------------------|
| | 08/17/2020 | SD SET |
| | 10/06/2020 | LAND USE APPLICATION |

CERTIFICATION

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| COMMISSION NUMBER | XXXX-XXX |

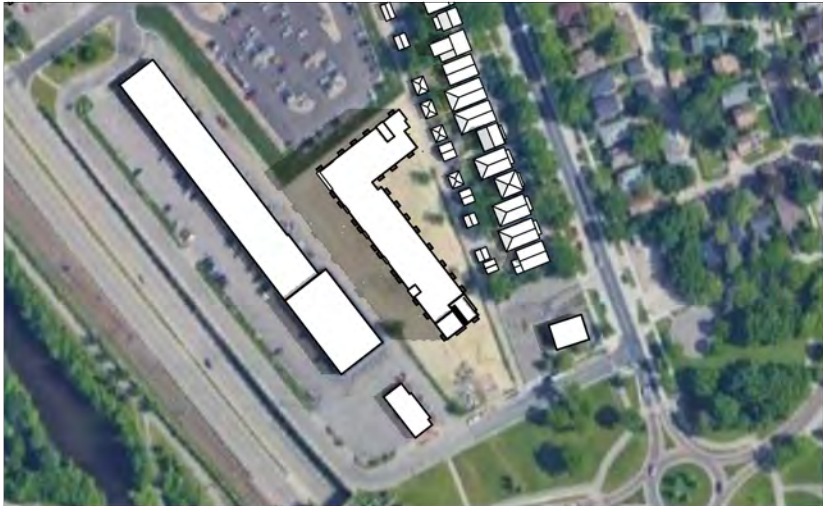
SHEET TITLE

EXTERIOR
ELEVATIONS

SHEET NUMBER

A403

SHADOW STUDY



JUNE 21, 8 AM



JUNE 21, 12 PM



JUNE 21, 5 PM



MAR 21, 8 AM



MARCH 21, 12 PM



MARCH 21, 5 PM






DECEMBER 21, 10 AM



DECEMBER 21, 12 PM



DECEMBER 21, 3 PM

| Luminaire Schedule | | | | | | | |
|---|-----|-------|-------------|-------|---|------------|-------------|
| Symbol | Qty | Label | Arrangement | LLF | Description | Arr. Watts | Lum. Lumens |
|  | 1 | AA | SINGLE | 0.900 | LUMARK PRV-C25-D-UNV-T3-BZ-HSS MOUNT ON 20FT POLE WITH 2FT BASE | 96 | 11975 |
|  | 3 | BB | SINGLE | 0.900 | LUMARK PRV-C25-D-UNV-T4-BZ-HSS MOUNT ON 20FT WITH 2FT BASE | 96 | 11933 |
|  | 1 | CC | SINGLE | 0.900 | LUMARK XTOR3B WALL MOUNT AT 10FT | 25.5 | 2751 |

| Calculation Summary | | | | | | | | |
|---------------------|-------------|-------|------|-----|-----|---------|---------|--|
| Label | CalcType | Units | Avg | Max | Min | Avg/Min | Max/Min | |
| SITE GROUND | Illuminance | Fc | 0.42 | 6.1 | 0.0 | N.A. | N.A. | |
| PARKING | Illuminance | Fc | 2.04 | 3.3 | 1.3 | 1.57 | 2.54 | |

| Luminaire Location Summary | | | | | | |
|----------------------------|-------|----------|----------|----|---------|------|
| LumNo | Label | X | Y | Z | Orient | Tilt |
| 24 | AA | 543679.6 | 146180.4 | 22 | 38.32 | 0 |
| 25 | BB | 543642.3 | 146287.6 | 22 | 307.951 | 0 |
| 26 | CC | 543754.2 | 146047 | 10 | 310.876 | 0 |
| 28 | BB | 543759.4 | 145923.7 | 22 | 34.461 | 0 |
| 29 | BB | 543762.9 | 145991.4 | 22 | 20.868 | 0 |



TYPE AA & BB



TYPE CC



Plan View
Scale: 1 inch= 40 Ft.

GENERAL NOTES:

- A. PULSE PRODUCTS DOES NOT ASSUME RESPONSIBILITY FOR THE INTERPRETATION OF THIS CALCULATION OR COMPLIANCE TO THE LOCAL, STATE, OR FEDERAL LIGHTNG CODES OR ORDINANCES.
- B. LIGHTING LAYOUT IS NOT INTENDED FOR CONSTRUCTION DOCUMENTS BUT ONLY TO ILLUSTRATE THE PERFORMANCE OF THE PRODUCT.
- C. ALL READINGS/CALCULATIONS SHOWN ARE SHOWN ON OBJECTS/SURFACES.



| # | Date | Comments |
|---|------|----------|
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| Revisions | | | |
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|------------------|--|
| LOWA 46 PHASE II | |
| | |

| ISSUE # | DATE | DESCRIPTION |
|---------|----------|--------------|
| 1 | 08/07/20 | PDR SUBMITAL |
| 2 | 10/09/20 | LUA SUBMITAL |

ALTA/NSPS LAND TITLE SURVEY FOR: Kimley Horn & Associates

LEGAL DESCRIPTION:

Per the Commitment for Title Insurance prepared by First American Title Insurance Company National Commercial Services, Commitment No. NCS-1011507-MPLS dated April 13, 2020;

Parcel 1:
Lot 1, Block 1, Adam Straub Second Addition, Hennepin County, Minnesota.
(Torrens property, Certificate of Title No. 1496833)

Parcel 2:
Tract A, Registered Land Survey No. 1876, Hennepin County, Minnesota.
(Torrens property, Certificate of Title No. 1496837)

Parcel 3:
Tract B, Registered Land Survey No. 1876, Hennepin County, Minnesota.
(Torrens property, Certificate of Title No. 1496838)

Parcel 4:
Lot 2, Block 2, Adam Straub Second Addition, Hennepin County, Minnesota.
(Torrens property, Certificate of Title No. 1502167)

(Surveyed Property)

GENERAL SURVEY NOTES:

- The orientation of this bearing system is based on the Hennepin County coordinate grid (NAD 83-2011 Adj).
- The legal description and easement information used in the preparation of this survey is based on the Commitment for Title Insurance prepared by First American Title Insurance Company National Commercial Services, Commitment No. NCS-1011507-MPLS dated April 13, 2020 at \$5.00 gm.

OPTIONAL TABLE A ITEMS:

- Monuments have been placed at all major corners of the property described hereon, unless already marked or referenced by existing monuments or witnesses in close proximity to the corner.
 - The address of the property described hereon is 4120 Nawadaha Boulevard, Minneapolis, Minnesota 55406
 - The property described hereon lies within Flood Zone X (Areas determined to be outside of the 0.2% annual chance floodplain) per Federal Insurance Rate Map No. 27003 C 0387 F, dated November 4, 2016.
 - The total area of the property described hereon is 82,064 square feet or 1.8843 acres.
 - The contours depicted hereon are per elevation data collected while conducting the fieldwork. The contour interval is 1 foot.
- SITE BENCHMARK NO. 1: Top nut of hydrant located in the northwest quadrant of intersection of 46th Street & Snelling Avenue.
Elevation = 833.50 feet (NAVD 88)
- SITE BENCHMARK NO. 2: Top nut of hydrant located southerly of Nawadaha Boulevard southwest of the surveyed property.
Elevation = 824.71 feet (NAVD 88)

- No zoning report or letter was received from the insurer pursuant to Optional Table A Item 6(a) of Table A, as set forth in the 2016 Minimum Standards for Data Requirements for ALTA/NSPS Land Title Surveys.
- No buildings were observed on the surveyed property in the process of conducting the fieldwork.
- No buildings were observed on the surveyed property in the process of conducting the fieldwork.
- No buildings were observed on the surveyed property in the process of conducting the fieldwork.
- Substantial features observed in the process of conducting the fieldwork are depicted hereon.
- As of the date of this survey the property described hereon contains no parking spaces.
- Existing utilities, services and underground structures shown hereon were located either physically from existing records made available to us, by resident testimony, or by locations provided by Gopher State One Call, per Ticket No. 201483237. However, locating excavation, the exact location of underground features cannot be accurately, completely and reliably depicted. Where additional or more detailed information is required, the client is advised that excavation may be necessary. Other utilities and services may be present and verification and location of all utilities and services should be obtained from the owners of the respective utilities prior to any design, planning or excavation.
- The names of adjoining owners according to current tax records are depicted hereon.
- As of the date of this survey there is no observable evidence of current earth moving work, building construction or building additions on the property described hereon.
- The surveyor is unaware of any completed or proposed changes in street right-of-way lines. As of the date of this survey there is no observable evidence of recent street or sidewalk construction or repairs that affect the property described hereon.
- No wetland delineation markers were observed during the process of conducting the fieldwork.
- The plottable offsite easements or servitudes disclosed in documents provided to the surveyor are depicted hereon.
- Professional Liability Insurance policy obtained by the surveyor to be in effect throughout the contract term.

SURVEY ITEMS PER SCHEDULE B:

- ITEM 10: Subject to minerals and mineral rights reserved by the State of Minnesota; (Now as to part of above land) and shown by recital on the Certificate of Title. (As to Parcels 1, 2 and 3)
- Does not affect the surveyed property.
- ITEM 11: Easement for electric transmission line purposes, together with any incidental rights, in favor of Northern States Power Company, a Minnesota corporation, as contained in the Easement dated May 31, 1955, recorded June 3, 1955, as Document No. 462119. (As to Parcels 2, 3 and 4)
- Said easement affects the surveyed property and is depicted hereon.
- ITEM 12: Easement for right of way and for the purposes of transmitting electrical energy, together with any incidental rights, in favor of Northern States Power Company, a Minnesota corporation, as contained in the First Certificate dated November 17, 1993, recorded November 16, 1993, as Document No. 2443299. (As to Parcels 1, 2, 3 and 4)
- Said easement affects the surveyed property and is depicted hereon.
- ITEM 13: Conditions contained in the Conditional Use Permit issued by the City of Minneapolis, recorded December 28, 2017, as Document No. T05501045. (As to Parcels 1, 2 and 3)
- Does not affect the surveyed property.
- ITEM 14: Declaration in favor of the Minnehaha Creek Watershed District, and the conditions and restrictions thereof, as contained in the instrument dated January 17, 2018, recorded February 6, 2018, as Document No. T05509912. (As to Parcels 2 and 3)
- Does not affect the surveyed property.
- ITEM 20: Easement for broadband communications system purposes, together with any incidental rights, in favor of Comcast Cable Communications Management, LLC, as contained in the Grant of Easement recorded December 2, 2018, as Document No. T05666561. (As to Parcels 2 and 3)
- Does not affect the surveyed property.

CERTIFICATION:

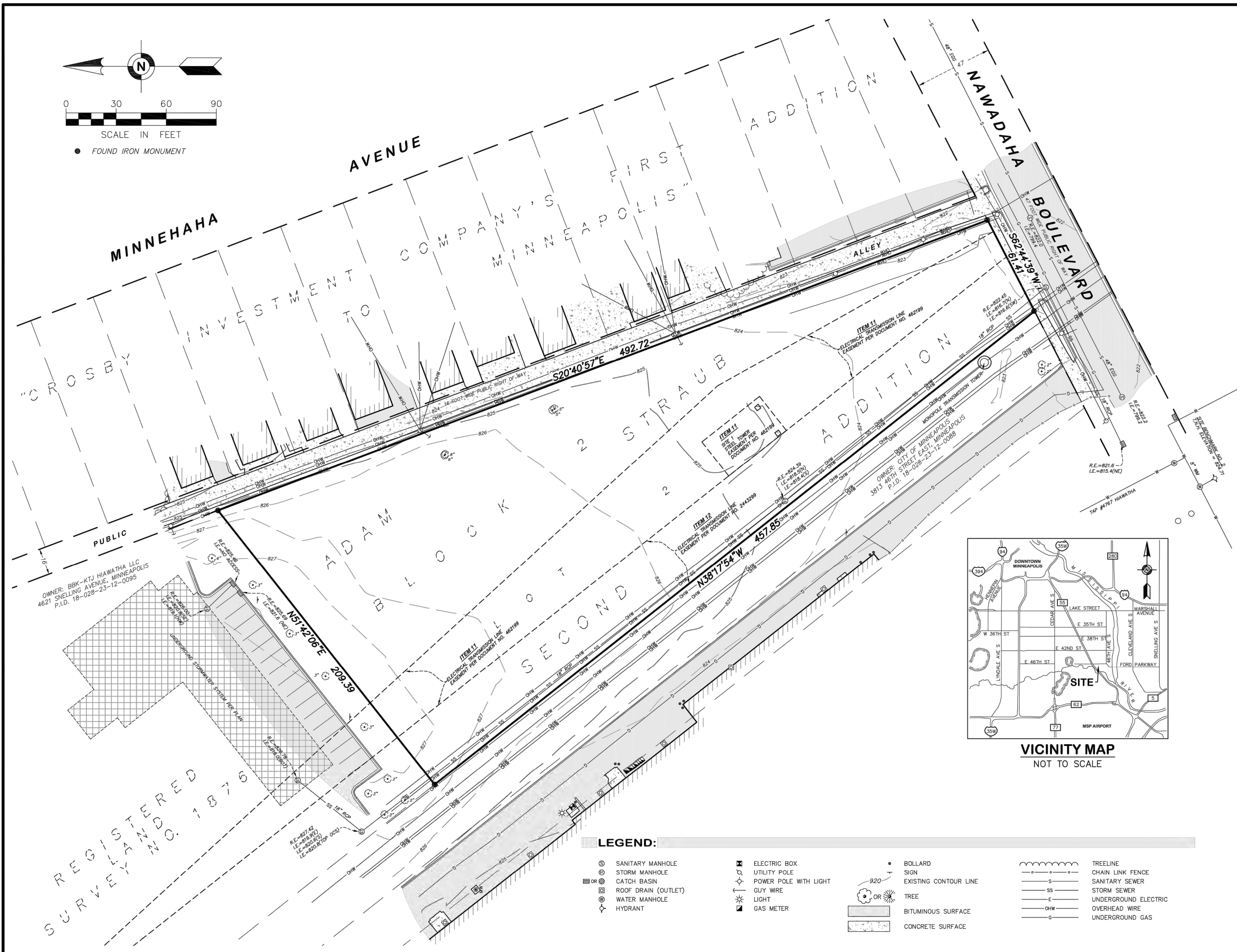
To KTJ 295, LLC, a Minnesota Limited Liability Company, and First American Title Insurance Company National Commercial Services:
This is to certify that this map or plat and the survey thereon was made in accordance with the 2016 Minimum Standards for Data Requirements for ALTA/NSPS Land Title Surveys, as established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 5, 6(a), 7(c), 7(d)(1), 7(c), 8, 9, 11, 13, 16, 17, 18, 19 and 20 of Table A thereof. The fieldwork was completed on June 10, 2020.

Date of Plat or Map: June 23, 2020

Eric A. Roesser
Minnesota License No. 47476
eroesser@efnsurvey.com



1229 Tyler Street NE, Suite 100
Minneapolis, Minnesota 55413
PHONE: (612) 466-3300
FAX: (612) 466-3383
WWW.EFNSURVEY.COM
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| FIELD BOOK | PAGE | FIELDWORK CHIEF: | NO. | DATE | REVISIONS |
|---------------|------|------------------|-----|------|-------------|
| | | SPK_DV | | | DESCRIPTION |
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| | | PMD | | | |
| DRAWING NAME: | | CHECKED BY: | | | |
| 39161.dwg | | EAR | | | |
| JOB NO. 39161 | | | | | |
| FILE NO. 1529 | | | | | |

ALTA/NSPS LAND TITLE SURVEY

SURVEY FOR:
Kimley Horn & Associates

PROPERTY ADDRESS:
4120 Nawadaha Boulevard
Minneapolis, Minnesota 55406



LONGFELLOW

COMMUNITY COUNCIL

October 8th, 2020

TO: Peter Crandall

Community Planning and Economic Development

250 S. Fourth Street, Room 300

Minneapolis, MN 55415

RE: Proposal for Multi-family Development at 3939 E 46th Street

Dear Peter Crandall and members of the Minneapolis City Planning Commission,

Please accept this letter of support for the development proposal for 3939 E 46th Street.

As presented to the Longfellow Community Council (LCC), this proposal will include the construction of a five story multi-family building that includes 144 units and a total of 122 parking stalls.

It is understood that this proposal also includes requests for a Conditional Use Permit to increase the maximum building height in a C3A district from 4-stories, 56ft to 5-stories, 54ft, a variance to Pedestrian Overlay District standards to increase the maximum front yard setback from Nawadaha Blvd., a variance to reduce the minimum interior side yard along the east property line adjacent to the alley, as well as a site plan review.

To the extent that the Longfellow Community Council (LCC) has been involved in a community engagement effort around this development we can report the following:

- Representatives of Oppidan Investment Company attended an LCC Neighborhood Development and Transportation Committee meeting on February 4th, 2020 to present their proposal and obtain feedback from the community.
- Representatives of Oppidan Investment Company participated in a virtual community meeting hosted by LCC on September 24th, 2020 to present their proposal and answer resident questions.

LONGFELLOW • HIAWATHA • COOPER • HOWE

2727 26th Avenue S., Minneapolis, MN 55406

612.722.4529

longfellow.org

Based on the overall resident feedback we have received, the Longfellow Community Council supports this development proposal as it has been presented to date.

Please feel free to contact me if you have any further questions about our position on this matter.

Sincerely,

A handwritten signature in blue ink, reading "Justin Gaarder". The signature is fluid and cursive, with a long horizontal stroke at the end.

Justin Gaarder
Program Manager
Longfellow Community Council



TRAVEL DEMAND MANAGEMENT PLAN

PHASE II RESIDENTIAL DEVELOPMENT

MINNEAPOLIS, MINNESOTA

Prepared for:

Oppidan Investment Company

400 Water Street, Suite 200
Excelsior, MN 55331

Prepared by:

Kimley-Horn and Associates, Inc.

767 Eustis Street, Suite 100
St. Paul, MN 55114

August 2020

Kimley»Horn

TRAVEL DEMAND MANAGEMENT PLAN

PHASE II RESIDENTIAL DEVELOPMENT

MINNEAPOLIS, MINNESOTA

PLAN APPROVAL

Oppidan Investment Company

By: _____ Dated: _____

Minneapolis Community Planning and Economic Development Department

By: _____ Dated: _____

Minneapolis Public Works Department

By: _____ Dated: _____

TRAVEL DEMAND MANAGEMENT PLAN

PHASE II RESIDENTIAL DEVELOPMENT

MINNEAPOLIS, MINNESOTA

REPORT CERTIFICATION

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Morgan Hoxsie, P.E.

License No. 57819

Date

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Exhibits (Provided in Appendix A)

Exhibit 1-1: Project Site Location and Study Area

Exhibit 3-1: Bicycle Infrastructure

Exhibit 3-2: Transit Infrastructure

Exhibit 5-1: Existing Geometry and Intersection Control

Exhibit 5-2: Existing Conditions (2020) Peak Hour Traffic Volumes

Exhibit 5-3: Opening Year No-Build Conditions (2022) Peak Hour Traffic Volumes

Exhibit 5-4: Site Trip Distribution

Exhibit 5-5: Site Trip Assignment

Exhibit 5-6: Opening Year Build Conditions (2022) Peak Hour Traffic Volumes

1.0 BACKGROUND

Oppidan Investment Company is proposing to construct Phase II Residential development located at 4120 Nawadaha Boulevard in the City of Minneapolis, Minnesota. The site is located in the Hiawatha Neighborhood of Minneapolis. The project location is shown in **Exhibit 1-1** with the proposed development site in blue. All exhibits are provided in **Appendix A**.

The full site (Phase I and Phase II) consists of two parcels currently owned by Oppidan Investment Company. Phase I of the development was completed in 2019 and includes a 45,760-square foot grocery store with 3,130 square feet of retail use on the ground level, and 146-unit apartment units on levels two through five. The current proposal for Phase II includes 140 residential units with a below grade parking facility.

The proposed site for Phase II is anticipated to have one driveway on Nawadaha Boulevard and three driveways on the alley east of the site. There will be access to the underground parking from the southern alley driveway as well as from the Nawadaha Boulevard driveway. There are two access points to the smaller surface lot from the alley as shown in the site plan in **Appendix B**.

CITY OF MINNEAPOLIS TRANSPORTATION GOALS

The following policies for transportation are included in *Minneapolis 2040*, adopted in 2019 by the Minneapolis City Council and effective as of January 1, 2020:

Policy 1: Increase the supply of housing and its diversity of location and types.

Policy 2: Support employment growth downtown and in places well-served by public transportation.

Policy 4: Improve access to goods and services via walking, biking and transit.

Policy 5: Ensure a high-quality and distinctive physical environment in all parts of the city through building and site design requirements for both large and small projects.

Policy 6: Regulate land uses, building design, and site design of new development consistent with a transportation system that prioritizes walking first, followed by bicycling and transit use, and lastly motor vehicle use.

Policy 16: Reduce the energy, carbon, and health impacts of transportation through reduced single-occupancy vehicle trips and phasing out of fossil fuel vehicles.

Policy 17: Plan, design, build, maintain, and operate the city's transportation system in a way that prioritizes pedestrians first, followed by bicycling and transit use, and lastly motor vehicle use.

Policy 18: Improve the pedestrian environment in order to encourage walking and the use of mobility aids as a mode of transportation.

Policy 19: Improve and expand bicycle facilities in order to encourage bicycling as a mode of transportation.

Policy 46: Proactively address health hazards in housing and advance design that improves physical and mental health.

Policy 58: Support thriving business districts and corridors that build on cultural assets and serve the needs of Minneapolis residents.

Policy 80: Support development and public realm improvements near existing and planned METRO stations that result in walkable districts for living, working, shopping, and recreating.

Based on these goals and those of the Draft Transportation Action Plan, previous TDMPs in the area, availability of transit and bicycle infrastructure and the location of the development, the developer has identified the mode split goals for the project as provided in **Table 1-1**.

Table 1-1: Mode Split Goals

| Mode | Mode Split Goal |
|-------------------|-----------------|
| Auto | 50% |
| Walk/Bike/Transit | 50% |

With the Travel Demand Management Strategies in this report, the proposed development will work toward the mode split goals listed in Table 1-1. A baseline survey at the proposed development will be performed within one year of building occupancy to assess residential tenants' commuting habits. An additional survey will be performed within two years of building occupancy and annually until the mode split goal is achieved.

TRAVEL DEMAND MANAGEMENT GOALS

In an effort to work toward the goals outlined in *Minneapolis 2040*, the City of Minneapolis requires the preparation of a Travel Demand Management Plan (TDMP) for all non-residential development or additions over 100,000 square feet or more of gross floor area or any development or redevelopment projects deemed to have a potential for substantial traffic impact.

This TDMP details the proposed project, including the site's design, location, and proposed amenities that will foster the use of alternate transportation modes by residents, employees, guests and patrons. It also references the anticipated traffic and parking changes and any potential impacts of these changes. Finally, the plan outlines specific mitigation strategies that Oppidan will commit to on behalf of the future tenants. These strategies are intended to reinforce the land use selected, site design, and amenities proposed to encourage the use of alternate modes of travel, enhance pedestrian friendliness, and create a balance between all users of the local transportation system.

2.0 ZONING AND LAND USES

The existing primary zoning of the site is C3A Community Activity Center District. The City of Minneapolis describes the C3A district as follows:

“The C3A Community Activity Center District is established to provide for the development of major urban activity and entertainment centers with neighborhood scale retail sales and services. In addition to entertainment and commercial uses, residential uses, institutional uses, parking facilities, limited production and processing and public services and utilities are allowed.”

The site is also within a Pedestrian Overlay District and an Airport Overlay District. The City of Minneapolis describes the Pedestrian Overlay District as follows:

“The PO Pedestrian Oriented Overlay District is established to preserve and encourage the pedestrian character of commercial areas and to promote street life and activity by regulating building orientation and design and accessory parking facilities, and by prohibiting certain high impact and automobile-oriented uses.”

The City of Minneapolis describes the Airport Overlay District as follows:

“The AP Overlay District is established to implement the 2004 Minneapolis-St. Paul International Airport (Wold-Chamberlain Field) Zoning Ordinance (hereinafter 2004 MSP Zoning Ordinance) and to provide for the acoustical integrity of Metropolitan Airports Commission (MAC) insulated homes in the MSP noise impact area. The 2004 MSP Zoning Ordinance, pursuant to the provisions and authority of Minnesota Statutes Section 360.063, whenever more restrictive than the underlying code takes precedent within areas of the City of Minneapolis regulating and restricting the height of structures and objects of natural growth and otherwise regulating the use of property in the vicinity of the Minneapolis-St. Paul International Airport. The 2004 MSP Zoning Ordinance creates zones and establishes boundaries that extend into the City of Minneapolis. It is the purpose of the AP Overlay District to protect the public health, safety, and general welfare and to promote the most appropriate use of land by preventing the creation or establishment of Airport Hazards subject to the 2004 MSP Zoning Ordinance and Minnesota Statutes.”

SMALL AREA PLAN

The City of Minneapolis has developed a Small Area Master Plan for the area surrounding the 46th Street LRT Station. This plan is outlined in the document entitled *46th and Hiawatha Transit-Oriented Development (TOD) Strategy* that was published by the City of Minneapolis in 2001. The plan refined TOD principles for the station area to meet the specific needs and character of the site. These principles include:

- Construct sustainable infrastructure and development
- Increase housing opportunities and choices
- Promote pedestrian, bicycle, auto and transit access
- Integrate a vibrant mix of retail with development
- Create a walkable and connected place

The developer has worked with City and County staff to ensure that the proposed development supports this vision set forth in the Small Area Master Plan.

3.0 PEDESTRIAN, BICYCLE, AND TRANSIT

PEDESTRIAN

The site is located within the Pedestrian Oriented Overlay District, as noted in Section 2 of this report, to encourage the pedestrian character of neighborhood developments. There is a dense network of sidewalks within the neighborhood that allows residents of the development to walk to their destinations rather than rely on a vehicle. The sidewalk network is especially important for those traveling to and from the 46th Street Station for the METRO Blue Line Light Rail Transit (LRT) service and the East 46th & Minnehaha Avenue station for the METRO A Line Bus Rapid Transit (BRT) service. The pedestrian infrastructure in the neighborhood has the potential to encourage walk trips to and from the site.

The future Min Hi Line Trail is proposed to be routed along the Snelling Avenue extension. The project assumed the trail would route along the west side of the proposed grocery store parking lot and cross East 46th Street at the new signalized intersection on Snelling Avenue. The timeframe for construction of the new trail will be coordinated in conjunction with the development.

A traffic signal was installed at the intersection of East 46th Street & Snelling Avenue as part of the Phase I development to provide pedestrians with a safe and direct controlled crossing of East 46th Street. This addition facilitated north/south pedestrian crossings of East 46th Street near the site, which was formerly a challenge between the signalized intersections at Hiawatha Avenue and Minnehaha Avenue (900 feet apart). The new signal with marked crosswalks and ADA accessible curb ramps created a safe and convenient crossing option for pedestrians, especially during periods with high traffic volumes.

BICYCLE

The site is well-situated to promote bicycling as a viable mode of transportation. Error! Reference source not found. shows the existing bicycle infrastructure accessible from the site, including on-street bike lanes, paved trails, and Nice Ride stations. The site is 500 feet from the Grand Rounds Regional Trail system with 51 miles of off-street trails in Minneapolis, and a quarter mile from the Hiawatha LRT Trail that parallels Hiawatha Avenue into downtown Minneapolis. The developer is also working to build the Min Hi Line trail, which will run north-south adjacent to the site and head north towards the Midtown Greenway.

To promote bicycle use, the developer plans to provide secure bicycle storage in the underground parking garage, as well as provide surface bicycle parking spaces. The developer will comply with the bicycle parking provisions as outlined in Section 541.180 of the Zoning Code. The developer plans on surpassing the minimum requirement by providing 71 long-term indoor bicycle parking spaces with an additional 24 short-term bicycle parking spaces distributed among the south, north and east entry points of the development. The Zoning Code requires at least one bicycle parking space per two dwelling units, with at least 90 percent of these spaces meeting the requirements for long-term bicycle parking. For this development, the code requires a minimum of 63 long-term bicycle parking spaces.

TRANSIT¹

Transit service in the project area is widely available with routes adjacent to the proposed site and within several blocks of the proposed site. **Exhibit 3-2** shows the project area with all transit routes near the site.

¹ Transit routes and frequencies described in this section reflect conditions prior to March 2020 when service levels were reduced in response to COVID-19.

LIGHT RAIL SERVICE

METRO Blue Line is a light rail transit line between downtown Minneapolis and the Mall of America in Bloomington. It operates weekdays, Saturdays and Sundays. This line is part of the High Frequency Network, with 10 minute headways weekdays during rush hours and midday. Service during nights and weekends provides 10-30 minutes headways. The METRO Blue Line connects to many additional bus routes and the METRO Green Line through a transfer. The METRO Blue Line station closest to the site is 46th Street Station.

BUS SERVICE

The site is accessible from all directions via seven bus routes, including one bus rapid transit route. These routes include:

The **METRO A Line** bus rapid transit route operates on 46th Street from 4:00 AM to 1:00 AM seven days a week. As part of the high frequency transit network the A Line operates with headways of 10 minute during the weekday rush hours and midday. Evening and weekend service operates with headways of 10-30 minutes.

Route 7 is a local route between Theodore Wirth Park in Minneapolis and 34th Avenue & Highway 62, via downtown Minneapolis. The route operates at headways between 15 and 60 minutes from approximately 5:00 AM to 1:00 AM, seven days a week.

Route 9 is a local bus route from Minnetonka, St. Louis Park, and West End to the 46th Street Station via downtown Minneapolis. The route operates weekdays from 5:30 AM to 1:30 AM, at headways between 15-30 minutes during rush hours and 30 minutes during midday and evening service. Weekend service is available from 6:30 AM to 1:30 AM with headways of 30-60 minutes.

Route 74 is a local bus route between the 46th Street Station and Sun Ray Transit Center or Maplewood via downtown St. Paul. The route operates weekdays from 4:30 AM to 1:30 AM, at headways between 15-20 minutes during rush hours, 20 minutes during midday service, and 30 minutes during evening service. Saturday and Sunday service is provided between 5:30 AM and 1:00 AM with headways between 20-30 minutes.

Route 46 is a local bus route from Edina to St. Paul. The route operates seven days a week from 7:00 AM to 11:00 PM. Weekday headways start at 15-30 minutes during rush hours, 30 minutes midday, and 30-60 minutes in the evening. Saturday headways are 30 minutes, and Sunday ranges from 30-60 minutes.

Route 436 is a rush hour route between the 46th Street Station and Eagan (Thomson Reuters). The route operates four to five times during weekday rush hours.

Route 446 is an express route from the 46th Street Station to Mendota Heights and Eagan. The route operates weekdays from 6:00 AM to 8:30 PM with headways of 30 minutes during rush hour and 60 minute headways the remainder of the day.

4.0 PARKING

EXISTING SITE

The proposed site is located in a C3A zoning district and a pedestrian oriented overlay district. The parking requirements and the proposed number of spaces for each of the land uses within the proposed redevelopment site are provided in this section. There is currently no parking on site as it is an undeveloped site.

REDEVELOPED SITE

According to Chapter 541: Off-Street Parking and Loading within the Minneapolis Code of Ordinances, the off-street parking requirements for residential land uses is a minimum of one parking space per dwelling unit with no defined maximum number of spaces. A reduction of 50 percent of residential parking stalls from the minimum requirement is authorized based on the Transit Incentive for Multiple-Family Dwellings section of the Minneapolis Code of Ordinances.

For the proposed residential building, it is anticipated that a significant proportion of daily trips by residents will be taken via alternative modes of transportation, including transit (Blue Line, A Line, etc.), bike, and walk trips. Many residents who travel by other modes of transportation are still likely to own a vehicle, however. The developer is therefore proposing to provide 122 parking stalls between an underground structured parking garage (102 spaces) and a small surface lot (20 spaces). With 141 dwelling units planned for the development, the parking ratio for residential parking is 0.87 stalls per dwelling unit. Residential parking stall costs will be separated from leases and renting a parking stall will not be mandatory for residents.

LOADING

For residential multi-family dwellings of 100 to 250 units, the City requires one small off-street loading space (Code 541.490). The City defines a small space as at least ten (10) feet in width by at least twenty-five (25) feet in length (Code 541.560).

Based on this requirement, the site meets the minimum loading requirements specified in the City of Minneapolis Zoning Code. The loading space on site is on the north end of the building with access to the loading zone from the alley.

5.0 TRAFFIC OPERATIONS

An analysis of the potential traffic impacts associated with the proposed development site was completed. The assumptions, methodology, results, and recommended improvements are detailed in this section. The following study intersections were analyzed for potential traffic impacts:

- Hiawatha Avenue & Burger King Driveway
- East 46th Street & Hiawatha Avenue
- East 46th Street & Holiday Driveway
- East 46th Street & Snelling Avenue
- East 46th Street & Alley
- East 46th Street & Minnehaha Avenue
- Minnehaha Avenue & Nawadaha Boulevard

The traffic conditions at these intersections were analyzed under three scenarios during the AM and PM peak hours of traffic using SimTraffic 10:

- Existing Conditions (2020)
- Opening Year No-Build Conditions (2022)
- Opening Year Build Conditions (2022)

Street types listed in the following section are based on the functional classifications defined in *MnDOT's Interactive BaseMap*. The 2016 AADTs reported in the following section were obtained from the City of Minneapolis Transportation Data Management System.

EXISTING TRAFFIC CONDITIONS

East 46th Street (CSAH 46) is a two-lane, two-way minor arterial roadway that runs east west. East 46th Street extends from South 28th Avenue on the west end to South 46th Avenue on the east end, where it changes to Ford Parkway. The posted speed limit on East 46th Street in the project vicinity is 30 miles per hour (mph). The 2016 annual average daily traffic (AADT) volumes on East 46th Street near the project site was 4,900 vehicles just west of Hiawatha Avenue, 13,300 vehicles between Hiawatha Avenue and Minnehaha Avenue, and 12,400 vehicles between Minnehaha Avenue and South 46th Avenue. Approximately 90 feet of on-street parking located on the north side of the road between Snelling Avenue and the Walgreens driveway is provided on East 46th Street. East 46th Street is controlled by traffic signals at the intersections with Hiawatha Avenue, Snelling Avenue, and Minnehaha Avenue. The Holiday Gas Station driveway, and the existing alley operate with side-street stop-control along East 46th Street.

Minnesota Trunk Highway 55 is designated as **Hiawatha Avenue** between I-94 to the north and Crosstown Highway (MN TH 62) to the south. Hiawatha Avenue is a four-lane, two-way divided principal arterial with a northwest-southeast orientation (considered north-south in this study) within the study area. The posted speed limit on Hiawatha Avenue in the study area is 40 mph. The 2016 AADTs on Hiawatha Avenue were 17,400 vehicles between East 42nd Street and East 46th Street, and 17,400 vehicles between Minnehaha Parkway and East 50th Street. Hiawatha is controlled by a traffic signal at East 46th Street. The Holiday Gas Station driveway and the driveway adjacent to Burger King on Hiawatha Avenue are right-in / right-out only with side-street stop-control (no stop sign is present at the Holiday Gas Station driveway). Hiawatha Avenue is a major highway, and as such, no on-street parking is permitted.

Minnehaha Avenue (CSAH 42) is an undivided two-lane, two-way roadway with a northwest to southeast orientation (considered north to south in this study) within the study area. It is classified as a minor arterial

between Lake Street and East 46th Street, and a local road between East 46th Street and Godfrey Parkway. The posted speed limit is 30 mph. The 2016 AADTs on Minnehaha Avenue were 6,400 between East 45th Street and East 46th Street, and 5,400 between East 46th Street and Godfrey Parkway. Minnehaha Avenue is controlled by a traffic signal at the intersection with East 46th Street, and Nawadaha Boulevard is stop-controlled at the intersection with Minnehaha Avenue. Bicycle lanes and on-street parking lanes are provided on each side of Minnehaha Avenue within the study area.

The existing lane configurations of these roadways at the study intersections are provided in Error! Reference source not found..

EXISTING TRAFFIC VOLUMES

To analyze traffic operations at the study intersections, turning movement count data from the Phase 1 development north of the project site were used for the seven study intersections. The traffic counts were completed on a weekday in 2016. New counts were not conducted as part of this study because traffic volumes and patterns were being affected by COVID-19. The network peak hours were determined to occur from 7:45 to 8:45 AM and from 4:30 to 5:30 PM. Peak hour factors of 0.98 and 0.99 were used for the AM and PM peak hours of analysis, respectively. With Phase 1 of the prior development completed, a background growth rate of 0.5 percent per year was applied to the 2019 Build volumes from the Phase 1 study to get the 2020 existing traffic volumes.

The estimated turning movement volumes for Existing Conditions (2020) are shown in **Exhibit 5-2**. Additionally, the raw traffic count data for the study intersections is shown in **Appendix C**.

BACKGROUND GROWTH

The proposed development is expected to be completed in 2022. Therefore, the No-Build and Build traffic analyses were conducted for the year 2022.

The AADT volume history on the roadway network adjacent to the site shows minimal to no growth, including negative growth on many of the study roadways. A background growth rate of 0.5 percent per year was used to project 2022 background traffic volumes to provide a conservative estimate for the anticipated future traffic volumes. The Opening Year No-Build (2022) scenario turning movement volumes are provided in Error! Reference source not found..

TRIP GENERATION

The trip-generating potential of the proposed residential development was calculated using information within the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, Tenth Edition. Standard ITE trip rates were used to develop the total site trips generated by the site. Based on the mode split goals of the development, a 50 percent reduction was applied to all vehicle trips to account for multimodal utilization on the site.

The “Multifamily (Mid-Rise)” land use (ITE code 221) was assumed for the proposed residential units. The average rate was used for the calculation of trips generated by the multifamily land use. The proposed residential development is planned to have 140 dwelling units.

Table 5-1 summarizes the total trip generation.

Table 5-1: Vehicle Trip Generation

| Code | Land Use Description | Units | No. | AM Peak Hour | | | PM Peak Hour | | |
|-------------------------------------|--------------------------------|-------|-----|--------------|------------|-------------|--------------|------------|-------------|
| | | | | Trips Enter | Trips Exit | Total Trips | Trips Enter | Trips Exit | Total Trips |
| 221 | Multifamily Housing (Mid-Rise) | DU | 140 | 13 | 37 | 50 | 38 | 24 | 62 |
| Total Site Trips | | | | 13 | 37 | 50 | 38 | 24 | 62 |
| Mode Split Reduction – 50% Non-Auto | | | | -7 | -18 | -25 | -19 | -12 | -31 |
| Total External Site Trips | | | | 6 | 19 | 25 | 19 | 12 | 31 |

TRIP DISTRIBUTION AND ASSIGNMENT

The vehicle trip distribution for the site traffic was developed based on current traffic patterns in the area and a general assessment of the major regional roadways outside of the study area. The proposed site is anticipated to have two surface lot access points in the alley that runs parallel to Minnehaha Avenue and an access to the underground parking ramp from Nawadaha Boulevard.

In general, the following trip distribution was assumed for the site:

- 40% of the trips to/from the north
- 30% of the trips to/from the south
- 10% of the trips to/from the west
- 20% of the trips to/from the east

The trip distribution for the site-generated traffic at all study intersections is shown in **Exhibit 5-4**. A map displaying the site-generated trip assignment based on this distribution is provided in **Exhibit 5-5**.

BUILD TRAFFIC

Exhibit 5-6 provides the total peak hour traffic volumes for Opening Year Build Conditions (2022). This is a combination of the Opening Year No-Build (2022) traffic volumes and the site-generated traffic volumes for the proposed development.

ANALYSIS RESULTS

Models of each scenario were developed using Synchro/SimTraffic, and the delay and vehicle queueing were evaluated for each scenario.

The Existing Conditions (2020) scenario was analyzed to provide an understanding of the existing delay and queueing issues within the study area. The Opening Year No-Build Conditions (2022) were then analyzed to provide an understanding of any potential delay or queueing issues within the project area that are likely to occur without the development of the site. Lastly, the Opening Year Build Conditions (2022) were analyzed to identify any locations within the network that may be directly impacted by the development of the site and the new trips it is anticipated to generate.

INTERSECTION CAPACITY ANALYSIS

The capacity of an intersection quantifies its ability to accommodate traffic volumes and is measured in average delay per vehicle. It is expressed in terms of level of service (LOS) which ranges from A to F, with LOS A as the highest (best traffic flow and least delay), LOS E as saturated or at-capacity conditions, and LOS F as the lowest (oversaturated conditions). The LOS grades shown below, which are provided in the Transportation Research Board's Highway Capacity Manual (HCM), quantify and categorize the driver's discomfort, frustration, fuel consumption, and travel times experienced as a result of intersection control and the resulting traffic queuing. A detailed description of each LOS rating can be found in **Table 5-2**. The range of control delay for each rating (as detailed in the HCM) is also shown in Table 5-2. Because signalized intersections are expected to carry a larger volume of vehicles and stopping is required during red time, higher delays are tolerated for the corresponding LOS ratings. For the purposes of this study, LOS A through LOS D are considered acceptable service levels.

Table 5-2: Level of Service Information

| Level of Service | Average Control Delay (seconds/vehicle) | Description |
|------------------|---|--|
| A | 0-10 (Unsignalized); 0-10 (Signalized) | Minimal control delay; traffic operates at primarily free-flow conditions; unimpeded movement within traffic stream. |
| B | >10-15 (Unsignalized); >10-20 (Signalized) | Minor control delay at signalized intersections; traffic operates at a fairly unimpeded level with slightly restricted movement within traffic stream. |
| C | >15-25 (Unsignalized); >20-35 (Signalized) | Moderate control delay; movement within traffic stream more restricted than at LOS B; formation of queues contributes to lower average travel speeds. |
| D | >25-35 (Unsignalized); >35-55 (Signalized) | Considerable control delay that may be substantially increased by small increases in flow; average travel speeds continue to decrease. |
| E | >35-50 (Unsignalized); >55-80 (Signalized) | High control delay; average travel speed no more than 33 percent of free flow speed. |
| F | >50 (Unsignalized); >80 (Signalized) | Extremely high control delay; extensive queuing and high volumes create exceedingly restricted traffic flow. |

The 95th percentile queue results for each scenario were compared to the existing storage length for each intersection movement to determine if any spillback occurs. For this study, the storage length is considered to be the measured length of exclusive turn lanes or corresponds to the distance to the nearest upstream full-access public intersection or signalized intersection for through lanes or where exclusive turn lanes are not provided. The queueing results of short unstriped storage lanes that were added to the traffic model are not discussed in the capacity analysis because these lanes were only modeled to replicate real-world conditions. Any potential queue spillback from them does not necessarily indicate an operations issue.

Existing geometric conditions were used for all intersections and existing signal timings, provided by the City of Minneapolis, were used at East 46th Street & Hiawatha Avenue, East 46th Street & Snelling Avenue and East 46th Street & Minnehaha Avenue. With the modeling completed in Synchro/SimTraffic, the effects of Transit Signal Priority (TSP) and railroad preemption were not explicitly analyzed. The effects of TSP and preemption are expected to have similar effects in both the No-Build and Build conditions.

Existing Conditions (2020)

The SimTraffic intersection delay results for the Existing Conditions (2020) are shown in **Table 5-3 & 5-4** for the AM and PM peak hours, respectively.

Under Existing Conditions (2020), all intersections are operating at LOS D or better during both peak hours. Additionally, all individual movements operate at a LOS D or better during both peak hours except for the following movements:

- Hiawatha Avenue & 46th Street: The westbound through, northbound left-turn, and southbound left-turn movements operate at LOS E during the PM peak hour. These movements are near the LOS D/E threshold.
- 46th Street & Holiday Driveway: The northbound left and right-turn movements operate at LOS F during the AM & PM peak hours.
- 46th Street & Alley: The northbound right-turn movement operates at LOS F in the AM peak hour and LOS E in the PM peak hour.

Based on the 95th percentile queue results for Existing Conditions (2020), no queue spillback is occurring in any turn lanes or into upstream intersections except for the following movements:

- Hiawatha Avenue & 46th Street: The westbound left-turn lane queue extends beyond its storage capacity, however there is a shared left-turn/through lane that provides additional capacity. Westbound queues extend beyond the Holiday Driveway with queues extending to the Snelling Avenue intersection in both the AM & PM peak hours. This is consistent with the operations shown in the Phase 1 traffic analysis build scenario.

The SimTraffic reports, which include the 95th percentile queueing results, are provided in **Appendix D**.

Table 5-3: Existing Conditions (2020) AM Peak Operations

| Intersection | Control | Approach | Operations by Movement | | | | | | Overall Intersection | |
|-------------------------------------|------------------|----------|------------------------|-----|-----------------|-----|-----------------|-----|----------------------|-----|
| | | | Left | | Through | | Right | | Delay (sec/veh) | LOS |
| | | | Delay (sec/veh) | LOS | Delay (sec/veh) | LOS | Delay (sec/veh) | LOS | | |
| Hiawatha Ave & 46th St | Signal | EB | 31.0 | C | 39.7 | D | 41.3 | D | 32.0 | C |
| | | WB | 39.0 | D | 51.1 | D | 12.2 | B | | |
| | | NB | 51.8 | D | 42.7 | D | 5.2 | A | | |
| | | SB | 47.7 | D | 23.2 | C | 3.8 | A | | |
| 46th St & Holiday Driveway | Side Street Stop | EB | - | - | 5.8 | A | 5.0 | A | 11.2 | B |
| | | WB | 18.7 | C | 5.1 | A | - | - | | |
| | | NB | 100+ | F | - | - | 60.0 | F | | |
| | | SB | - | - | - | - | - | - | | |
| 46th St & Snelling Ave | Signal | EB | 11.8 | B | 5.6 | A | 3.2 | A | 8.8 | A |
| | | WB | 12.3 | B | 8.4 | A | 1.8 | A | | |
| | | NB | 47.9 | D | - | - | 7.0 | A | | |
| | | SB | 23.9 | C | - | - | 8.5 | A | | |
| 46th St & Alley | Side Street Stop | EB | - | - | 8.0 | A | 16.2 | C | 5.7 | A |
| | | WB | - | - | 1.9 | A | - | - | | |
| | | NB | - | - | - | - | 52.9 | F | | |
| | | SB | - | - | - | - | - | - | | |
| 46th St & Minnehaha Ave | Signal | EB | 33.7 | C | 28.5 | C | 22.2 | C | 30.4 | C |
| | | WB | 35.5 | D | 44.4 | D | 23.6 | C | | |
| | | NB | 26.0 | C | 24.6 | C | 17.6 | B | | |
| | | SB | 21.1 | C | 22.2 | C | 15.6 | B | | |
| Minnehaha Ave & Nawadaha Ave | Side Street Stop | EB | 7.9 | A | - | - | 3.2 | A | 1.4 | A |
| | | WB | - | - | - | - | - | - | | |
| | | NB | 2.6 | A | 0.2 | A | - | - | | |
| | | SB | - | - | 1.8 | A | 2.2 | A | | |
| Hiawatha Ave & Burger King Driveway | Side Street Stop | EB | - | - | - | - | - | - | 2.0 | A |
| | | WB | - | - | - | - | 9.5 | A | | |
| | | NB | - | - | 1.2 | A | 0.6 | A | | |
| | | SB | - | - | 2.8 | A | - | - | | |

Note: delays in excess of 100 seconds per vehicle are reported as "100+"

Table 5-4: Existing Conditions (2020) PM Peak Operations

| Intersection | Control | Approach | Operations by Movement | | | | | | Overall Intersection | |
|-------------------------------------|------------------|----------|------------------------|-----|-----------------|-----|-----------------|-----|----------------------|-----|
| | | | Left | | Through | | Right | | Delay (sec/veh) | LOS |
| | | | Delay (sec/veh) | LOS | Delay (sec/veh) | LOS | Delay (sec/veh) | LOS | | |
| Hiawatha Ave & 46th St | Signal | EB | 30.6 | C | 40.6 | D | 40.4 | D | 36.9 | D |
| | | WB | 46.7 | D | 59.7 | E | 16.6 | B | | |
| | | NB | 56.3 | E | 51.7 | D | 6.1 | A | | |
| | | SB | 56.7 | E | 26.4 | C | 3.5 | A | | |
| 46th St & Holiday Driveway | Side Street Stop | EB | - | - | 6.4 | A | 5.7 | A | 21.4 | C |
| | | WB | 24.2 | C | 5.8 | A | - | - | | |
| | | NB | 100+ | F | - | - | 100+ | F | | |
| | | SB | - | - | - | - | - | - | | |
| 46th St & Snelling Ave | Signal | EB | 11.9 | B | 6.4 | A | 4.8 | A | 9.5 | A |
| | | WB | 10.4 | B | 9.0 | A | 4.6 | A | | |
| | | NB | 44.0 | D | - | - | 11.0 | B | | |
| | | SB | 54.3 | D | - | - | 9.8 | A | | |
| 46th St & Alley | Side Street Stop | EB | - | - | 8.8 | A | 14.7 | B | 5.6 | A |
| | | WB | - | - | 1.5 | A | - | - | | |
| | | NB | - | - | - | - | 39.6 | E | | |
| | | SB | - | - | - | - | - | - | | |
| 46th St & Minnehaha Ave | Signal | EB | 32.1 | C | 26.9 | C | 20.6 | C | 32.4 | C |
| | | WB | 35.8 | D | 41.6 | D | 28.4 | C | | |
| | | NB | 38.2 | D | 38.6 | D | 29.5 | C | | |
| | | SB | 28.8 | C | 30.9 | C | 23.4 | C | | |
| Minnehaha Ave & Nawadaha Ave | Side Street Stop | EB | 10.7 | B | - | - | 4.8 | A | 2.1 | A |
| | | WB | - | - | - | - | - | - | | |
| | | NB | 3.7 | A | 0.6 | A | - | - | | |
| | | SB | - | - | 2.6 | A | 2.1 | A | | |
| Hiawatha Ave & Burger King Driveway | Side Street Stop | EB | - | - | - | - | - | - | 2.5 | A |
| | | WB | - | - | - | - | 15.3 | C | | |
| | | NB | - | - | 1.6 | A | 0.8 | A | | |
| | | SB | - | - | 3.1 | A | - | - | | |

Note: delays in excess of 100 seconds per vehicle are reported as "100+"

Opening Year No-Build Conditions (2022)

For Opening Year No-Build Conditions (2022), all signal timing remained the same as Existing Conditions (2020) and no geometric changes were assumed. The SimTraffic intersection delay results for Opening Year No-Build Conditions (2022) are shown in **Table 5-5 & 5-6** for the AM and PM peak hours, respectively.

Under Opening Year No-Build Conditions (2022), all intersections are operating at LOS D or better during both peak hours. Additionally, all individual movements operate at LOS D or better during both peak hours except the following movements:

- Hiawatha Avenue & 46th Street: The northbound left-turn movement operates at LOS E during the PM peak hour. While in the existing condition the westbound through and southbound left-turn movements operated at LOS E, both movements are still close to the LOS D/E threshold.
- 46th Street & Holiday Driveway: The northbound left-turn movement operates at LOS F during the AM & PM peak hours and the northbound right turn movement operates at LOS E in the AM peak hour and LOS F in the PM peak hour.
- 46th Street & Alley: The northbound right-turn movement operates at LOS F in the AM peak hour and LOS E in the PM peak hour.

Based on the 95th percentile queue results for Opening Year No-Build Conditions (2022), no queue spillback is anticipated in any turn lanes or into upstream intersections except for the following movements:

- Hiawatha Avenue & 46th Street: The westbound left-turn lane queue extends beyond its storage capacity however there is also a shared left-turn/through lane that provides additional capacity. Similar to the existing conditions, westbound queues extend beyond the Holiday Driveway with queues extending to the Snelling Avenue intersection in both the AM & PM peak hours.

The SimTraffic reports, which include the 95th percentile queueing results, are provided in **Appendix D**.

Table 5-5: Opening Year No-Build Conditions (2022) AM Peak Operations

| Intersection | Control | Approach | Operations by Movement | | | | | | Overall Intersection | |
|-------------------------------------|------------------|----------|------------------------|-----|-----------------|-----|-----------------|-----|----------------------|-----|
| | | | Left | | Through | | Right | | Delay (sec/veh) | LOS |
| | | | Delay (sec/veh) | LOS | Delay (sec/veh) | LOS | Delay (sec/veh) | LOS | | |
| Hiawatha Ave & 46th St | Signal | EB | 30.6 | C | 38.8 | D | 41.3 | D | 32.5 | C |
| | | WB | 38.4 | D | 50.5 | D | 12.6 | B | | |
| | | NB | 50.9 | D | 43.9 | D | 5.3 | A | | |
| | | SB | 46.7 | D | 25.2 | C | 3.8 | A | | |
| 46th St & Holiday Driveway | Side Street Stop | EB | - | - | 5.7 | A | 5.2 | A | 9.0 | A |
| | | WB | 14.3 | B | 4.5 | A | - | - | | |
| | | NB | 82.0 | F | - | - | 39.5 | E | | |
| | | SB | - | - | - | - | - | - | | |
| 46th St & Snelling Ave | Signal | EB | 9.1 | A | 5.2 | A | 3.7 | A | 8.0 | A |
| | | WB | 9.7 | A | 6.4 | A | 0.9 | A | | |
| | | NB | 47.5 | D | - | - | 9.5 | A | | |
| | | SB | 40.9 | D | - | - | 9.2 | A | | |
| 46th St & Alley | Side Street Stop | EB | - | - | 9.6 | A | 7.5 | A | 6.3 | A |
| | | WB | - | - | 1.6 | A | - | - | | |
| | | NB | - | - | - | - | 60.2 | F | | |
| | | SB | - | - | - | - | - | - | | |
| 46th St & Minnehaha Ave | Signal | EB | 33.7 | C | 29.8 | C | 23.0 | C | 32.7 | C |
| | | WB | 44.4 | D | 50.9 | D | 29.0 | C | | |
| | | NB | 19.1 | B | 23.1 | C | 13.2 | B | | |
| | | SB | 20.2 | C | 21.2 | C | 12.7 | B | | |
| Minnehaha Ave & Nawadaha Ave | Side Street Stop | EB | 6.3 | A | - | - | 3.2 | A | 1.4 | A |
| | | WB | - | - | - | - | - | - | | |
| | | NB | 2.9 | A | 0.2 | A | - | - | | |
| | | SB | - | - | 1.8 | A | 1.4 | A | | |
| Hiawatha Ave & Burger King Driveway | Side Street Stop | EB | - | - | - | - | - | - | 2.2 | A |
| | | WB | - | - | - | - | 13.5 | B | | |
| | | NB | - | - | 1.3 | A | 0.7 | A | | |
| | | SB | - | - | 3.0 | A | - | - | | |

Table 5-6: Opening Year No-Build Conditions (2022) PM Peak Operations

| Intersection | Control | Approach | Operations by Movement | | | | | | Overall Intersection | |
|-------------------------------------|------------------|----------|------------------------|-----|-----------------|-----|-----------------|-----|----------------------|-----|
| | | | Left | | Through | | Right | | Delay (sec/veh) | LOS |
| | | | Delay (sec/veh) | LOS | Delay (sec/veh) | LOS | Delay (sec/veh) | LOS | | |
| Hiawatha Ave & 46th St | Signal | EB | 32.5 | C | 42.8 | D | 42.6 | D | 36.0 | D |
| | | WB | 45.2 | D | 54.4 | D | 18.0 | B | | |
| | | NB | 55.3 | E | 50.4 | D | 6.6 | A | | |
| | | SB | 54.3 | D | 26.5 | C | 3.9 | A | | |
| 46th St & Holiday Driveway | Side Street Stop | EB | - | - | 6.7 | A | 6.7 | A | 19.5 | C |
| | | WB | 28.1 | D | 5.0 | A | - | - | | |
| | | NB | 100+ | F | - | - | 100+ | F | | |
| | | SB | - | - | - | - | - | - | | |
| 46th St & Snelling Ave | Signal | EB | 10.2 | B | 6.5 | A | 4.9 | A | 9.0 | A |
| | | WB | 9.9 | A | 7.5 | A | 2.9 | A | | |
| | | NB | 45.5 | D | - | - | 10.8 | B | | |
| | | SB | 35.9 | D | - | - | 8.1 | A | | |
| 46th St & Alley | Side Street Stop | EB | - | - | 8.1 | A | 4.3 | A | 5.2 | A |
| | | WB | - | - | 1.5 | A | - | - | | |
| | | NB | - | - | - | - | 35.9 | E | | |
| | | SB | - | - | - | - | - | - | | |
| 46th St & Minnehaha Ave | Signal | EB | 29.4 | C | 25.6 | C | 20.9 | C | 30.7 | C |
| | | WB | 33.0 | C | 38.4 | D | 27.0 | C | | |
| | | NB | 35.8 | D | 36.5 | D | 26.8 | C | | |
| | | SB | 30.4 | C | 30.2 | C | 22.9 | C | | |
| Minnehaha Ave & Nawadaha Ave | Side Street Stop | EB | 9.7 | A | - | - | 5.1 | A | 2.2 | A |
| | | WB | - | - | - | - | - | - | | |
| | | NB | 3.8 | A | 0.6 | A | - | - | | |
| | | SB | - | - | 2.6 | A | 2.5 | A | | |
| Hiawatha Ave & Burger King Driveway | Side Street Stop | EB | - | - | - | - | - | - | 2.7 | A |
| | | WB | - | - | - | - | 19.0 | C | | |
| | | NB | - | - | 1.7 | A | 0.9 | A | | |
| | | SB | - | - | 3.2 | A | - | - | | |

Note: delays in excess of 100 seconds per vehicle are reported as "100+"

Opening Year Build Conditions (2022)

An analysis of the Opening Year Build Conditions (2022) was conducted during the AM and PM peak hours of traffic to evaluate the potential impacts due to site generated trips. All signal timing and intersection geometry remained the same as the Opening Year No-Build Conditions (2022). The Opening Year Build Conditions (2022) traffic volumes were based on the site traffic that would be generated from the proposed development. The SimTraffic intersection delay results for Opening Year Build Conditions (2022) are shown in **Table 5-7 & 5-8** for the AM and PM peak hours, respectively.

Under Opening Year Build Conditions (2022), all intersections are operating at LOS D or better during both peak hours. Additionally, all individual movements operate at LOS D or better during both peak hours except the following movements:

- Hiawatha Avenue & 46th Street: Similar to the Existing and Opening Year No Build Conditions, the westbound through, northbound left-turn, and northbound through movements operates at LOS E during the PM peak hour but are near the LOS D/E threshold.
- 46th Street & Holiday Driveway: Similar to the Existing and Opening Year No Build Conditions, the northbound left turn movement operates at LOS F during the AM & PM peak hours and the northbound right turn movement operates at LOS F in the PM peak hour. This issue is existing and not related to the development.

Based on the 95th percentile queue results for Opening Year No-Build Conditions (2022), no queue spillback is occurring in any turn lanes or into upstream intersections except for the following movements:

- Hiawatha Avenue & 46th Street: The westbound left-turn lane queue extends beyond its storage capacity however there is also a shared left-turn/through lane that provides additional capacity. Similar to the Existing and Opening Year No Build Conditions, westbound queues extend beyond the Holiday Driveway with queues extending to the Snelling Avenue intersection in both the AM & PM peak hours.

The SimTraffic reports, which include the 95th percentile queueing results, are provided in **Appendix D**.

All delay and queuing issues in the Build Conditions are existing and not the result of the additional development traffic in the study area.

Table 5-7: Opening Year Build Conditions (2022) AM Peak Operations

| Intersection | Control | Approach | Operations by Movement | | | | | | Overall Intersection | |
|-------------------------------------|------------------|----------|------------------------|-----|-----------------|-----|-----------------|-----|----------------------|-----|
| | | | Left | | Through | | Right | | Delay (sec/veh) | LOS |
| | | | Delay (sec/veh) | LOS | Delay (sec/veh) | LOS | Delay (sec/veh) | LOS | | |
| Hiawatha Ave & 46th St | Signal | EB | 27.9 | C | 40.4 | D | 43.0 | D | 33.2 | C |
| | | WB | 39.4 | D | 50.3 | D | 12.2 | B | | |
| | | NB | 52.2 | D | 46.1 | D | 5.4 | A | | |
| | | SB | 48.5 | D | 24.4 | C | 3.8 | A | | |
| 46th St & Holiday Driveway | Side Street Stop | EB | - | - | 5.7 | A | 5.2 | A | 8.3 | A |
| | | WB | 14.0 | B | 5.0 | A | - | - | | |
| | | NB | 70.6 | F | - | - | 29.5 | D | | |
| | | SB | - | - | - | - | - | - | | |
| 46th St & Snelling Ave | Signal | EB | 10.0 | A | 5.2 | A | 3.3 | A | 8.5 | A |
| | | WB | 9.7 | A | 8.0 | A | 1.7 | A | | |
| | | NB | 46.4 | D | - | - | 8.4 | A | | |
| | | SB | 42.6 | D | - | - | 10.6 | B | | |
| 46th St & Alley | Side Street Stop | EB | - | - | 6.1 | A | 3.5 | A | 4.3 | A |
| | | WB | - | - | 1.9 | A | - | - | | |
| | | NB | - | - | - | - | 28.0 | D | | |
| | | SB | - | - | - | - | - | - | | |
| 46th St & Minnehaha Ave | Signal | EB | 30.3 | C | 28.2 | C | 18.8 | B | 29.7 | C |
| | | WB | 34.2 | C | 42.7 | D | 22.3 | C | | |
| | | NB | 23.5 | C | 23.5 | C | 13.9 | B | | |
| | | SB | 20.6 | C | 21.4 | C | 14.7 | B | | |
| Minnehaha Ave & Nawadaha Ave | Side Street Stop | EB | 7.3 | A | - | - | 3.7 | A | 1.6 | A |
| | | WB | - | - | - | - | - | - | | |
| | | NB | 2.5 | A | 0.3 | A | - | - | | |
| | | SB | - | - | 2.0 | A | 1.9 | A | | |
| Hiawatha Ave & Burger King Driveway | Side Street Stop | EB | - | - | - | - | - | - | 2.2 | A |
| | | WB | - | - | - | - | 13.0 | B | | |
| | | NB | - | - | 1.4 | A | 0.7 | A | | |
| | | SB | - | - | 2.8 | A | - | - | | |

Table 5-8: Opening Year Build Conditions (2022) PM Peak Operations

| Intersection | Control | Approach | Operations by Movement | | | | | | Overall Intersection | |
|-------------------------------------|------------------|----------|------------------------|-----|-----------------|-----|-----------------|-----|----------------------|-----|
| | | | Left | | Through | | Right | | Delay (sec/veh) | LOS |
| | | | Delay (sec/veh) | LOS | Delay (sec/veh) | LOS | Delay (sec/veh) | LOS | | |
| Hiawatha Ave & 46th St | Signal | EB | 35.1 | D | 41.9 | D | 40.7 | D | 38.0 | D |
| | | WB | 44.4 | D | 57.6 | E | 14.2 | B | | |
| | | NB | 58.9 | E | 56.8 | E | 6.7 | A | | |
| | | SB | 54.9 | D | 26.7 | C | 4.0 | A | | |
| 46th St & Holiday Driveway | Side Street Stop | EB | - | - | 6.5 | A | 6.6 | A | 20.9 | C |
| | | WB | 26.7 | D | 6.4 | A | - | - | | |
| | | NB | 100+ | F | - | - | 100+ | F | | |
| | | SB | - | - | - | - | - | - | | |
| 46th St & Snelling Ave | Signal | EB | 12.5 | B | 6.7 | A | 4.9 | A | 10.1 | B |
| | | WB | 11.4 | B | 9.6 | A | 2.6 | A | | |
| | | NB | 44.6 | D | - | - | 10.7 | B | | |
| | | SB | 54.2 | D | - | - | 9.9 | A | | |
| 46th St & Alley | Side Street Stop | EB | - | - | 8.4 | A | 11.3 | B | 5.4 | A |
| | | WB | - | - | 1.5 | A | - | - | | |
| | | NB | - | - | - | - | 33.3 | D | | |
| | | SB | - | - | - | - | - | - | | |
| 46th St & Minnehaha Ave | Signal | EB | 31.2 | C | 26.3 | C | 17.9 | B | 32.2 | C |
| | | WB | 36.5 | D | 39.3 | D | 28.1 | C | | |
| | | NB | 44.1 | D | 38.5 | D | 30.5 | C | | |
| | | SB | 32.1 | C | 31.4 | C | 24.7 | C | | |
| Minnehaha Ave & Nawadaha Ave | Side Street Stop | EB | 12.3 | B | - | - | 4.8 | A | 2.3 | A |
| | | WB | - | - | - | - | - | - | | |
| | | NB | 4.3 | A | 0.7 | A | - | - | | |
| | | SB | - | - | 2.6 | A | 2.1 | A | | |
| Hiawatha Ave & Burger King Driveway | Side Street Stop | EB | - | - | - | - | - | - | 3.0 | A |
| | | WB | - | - | - | - | 23.4 | C | | |
| | | NB | - | - | 2.0 | A | 0.9 | A | | |
| | | SB | - | - | 3.2 | A | - | - | | |

Note: delays in excess of 100 seconds per vehicle are reported as "100+"

CAPACITY ANALYSIS SUMMARY

A capacity analysis was completed for the study intersections for three scenarios: Existing Conditions (2020), Opening Year No-Build Conditions (2022), and Opening Year Build Conditions (2022).

Under Existing Conditions (2020) and Opening Year No-Build (2022), all study intersections currently operate and are anticipated to operate at an overall intersection LOS D or better in both peak hours. With the addition of the anticipated site traffic for the Opening Year Build Conditions (2022), the overall intersection LOS for all study intersections remains at LOS D or better during both peak hours. The delay and LOS of individual movements showed no significant changes between the Opening Year Build and No-Build conditions.

Based on the capacity analysis completed for the proposed development, no significant impacts in traffic conditions are expected in the study area due to the additional site traffic. As such, no mitigations are suggested for the project area.

6.0 TRAVEL DEMAND MANAGEMENT STRATEGIES

The purpose of this TDMP is to assist the City of Minneapolis to achieve their overall transportation goals as they relate specifically to the Oppidan site at 46th and Hiawatha by managing and minimizing the vehicle trips generated by the development.

This section outlines specific travel demand management strategies to be implemented by the developer. The strategies detail the duties of the developer in addressing the transportation issues cited in this document.

The property owner, by accepting the responsibility of implementing the items below for the proposed development, desires to help the City of Minneapolis achieve their goal of enhancing the local transportation system by lowering peak hour demand and helping to achieve a balance in the needs of all transportation system users.

STRATEGY COMMITMENTS

The developer specifically commits to the implementation of the following measures for the project:

GENERAL

1. Designate a TDM liaison for the proposed site that will maintain, monitor, and coordinate the various TDM strategies that require ongoing attention.
2. Conduct baseline surveys to assess residential tenants' commuting habits within one year of building occupancy. Conduct a follow-up survey within two years of building occupancy, and annually until mode split goals are achieved (up to 5 years).
3. Provide at least one highly visible or otherwise frequently traveled area on site designed to share transit, bicycle, NiceRide, car share, and Commuter Connection information.
4. Provide a packet of multi-modal information (either printed, digital, or both) to each new resident upon signing a lease and moving in.
5. Reach out to shared scooter companies to discuss potentially having staged motorized scooters near the residential building for tenants to access.
6. Host events for Bike-to-Work or Transit-to-Work days to encourage residents to try out and create a community around alternative commuting strategies.

PEDESTRIANS

7. Maintain clear, ADA accessible sidewalks around the site to connect to the municipal sidewalk and trail system.
8. Create a vibrant pedestrian experience through landscaping, wayfinding, and lighting improvements.

BICYCLISTS

9. The developer will provide 71 long-term indoor bicycle parking spaces with an additional 24 short term bicycle parking spaces distributed among the south, north and east entry points of the development to exceed the minimum of 63 bicycle parking spaces required for the residential land use in the Zoning Code.
10. Provide a secure bicycle service station for use by residential tenants.
11. Providing wayfinding on the proposed site for residents to access the existing Grand Rounds trail network.

12. Construct the Min Hi Line Trail that will run north-south adjacent to the site and head north towards the Midtown Greenway.

TRANSIT

13. Provide a free transit pass for up to three rides for all new tenants of the apartments.
14. Provide appropriate wayfinding within the development to point residential tenants and guests to the Metro Transit stations and stops adjacent to the development.

DELIVERIES

15. Develop and maintain a policy to encourage service deliveries to take place outside of peak travel times (with the exception of mail and courier deliveries).

PARKING

16. Parking stall costs will be separated from residential leases and renting a parking stall will not be mandatory for residential tenants.
17. Work with the local car-share agency (HOURCAR) to assess interest in adding one or more dedicated stalls to the surface lot.

7.0 APPENDIX

- A. Exhibits
- B. Site Plan
- C. Raw Traffic Count Data
- D. SimTraffic Reports

Appendix A: Exhibits

Exhibit 1-1: Project Site Location and Study Area

Exhibit 3-1: Bicycle Infrastructure

Exhibit 3-2: Transit Infrastructure

Exhibit 5-1: Existing Geometry and Intersection Control

Exhibit 5-2: Existing Conditions (2020) Peak Hour Traffic Volumes

Exhibit 5-3: Opening Year No-Build Conditions (2022) Peak Hour Traffic Volumes

Exhibit 5-4: Site Trip Distribution

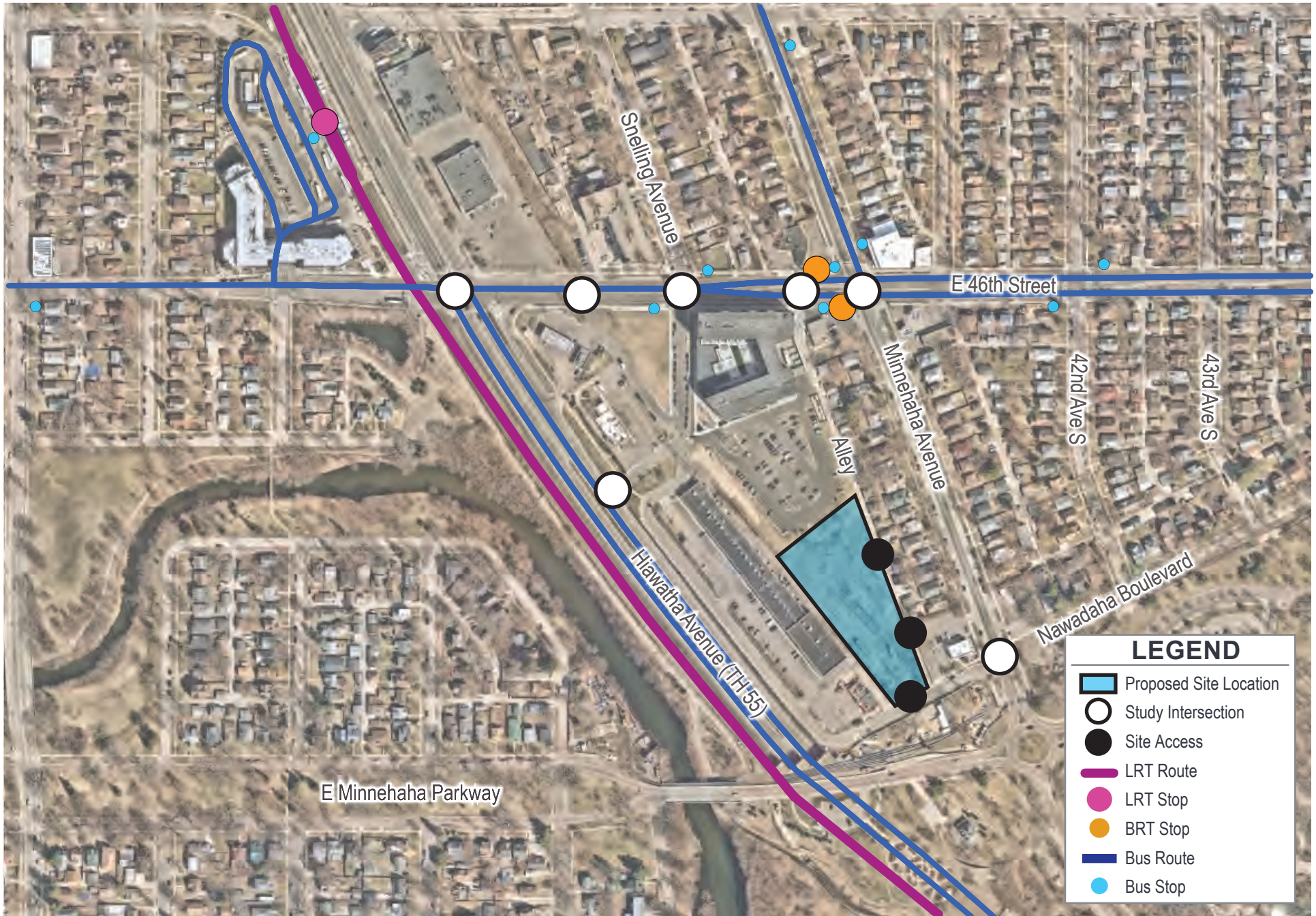
Exhibit 5-5: Site Trip Assignment

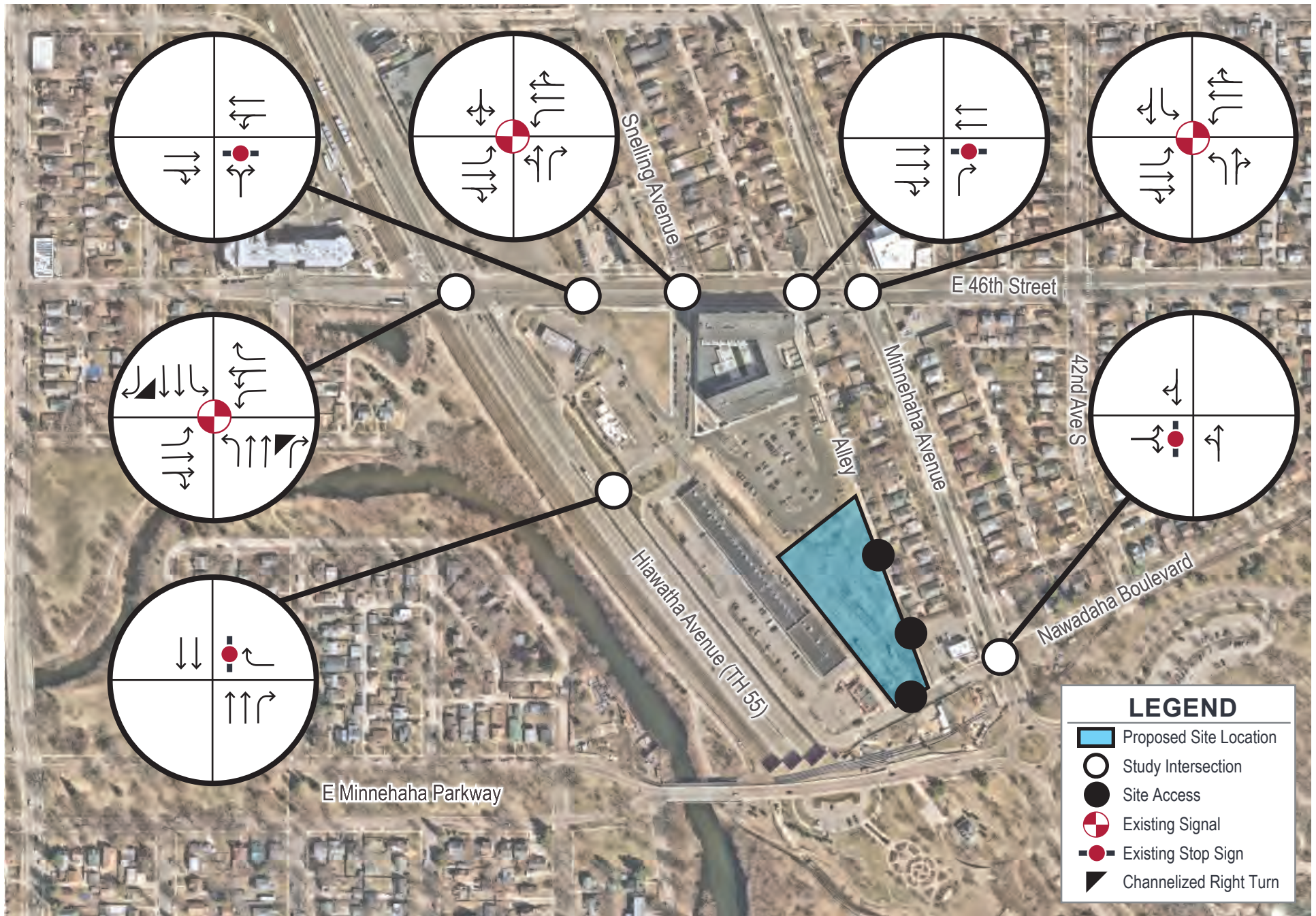
Exhibit 5-6: Opening Year Build Conditions (2022) Peak Hour Traffic Volumes

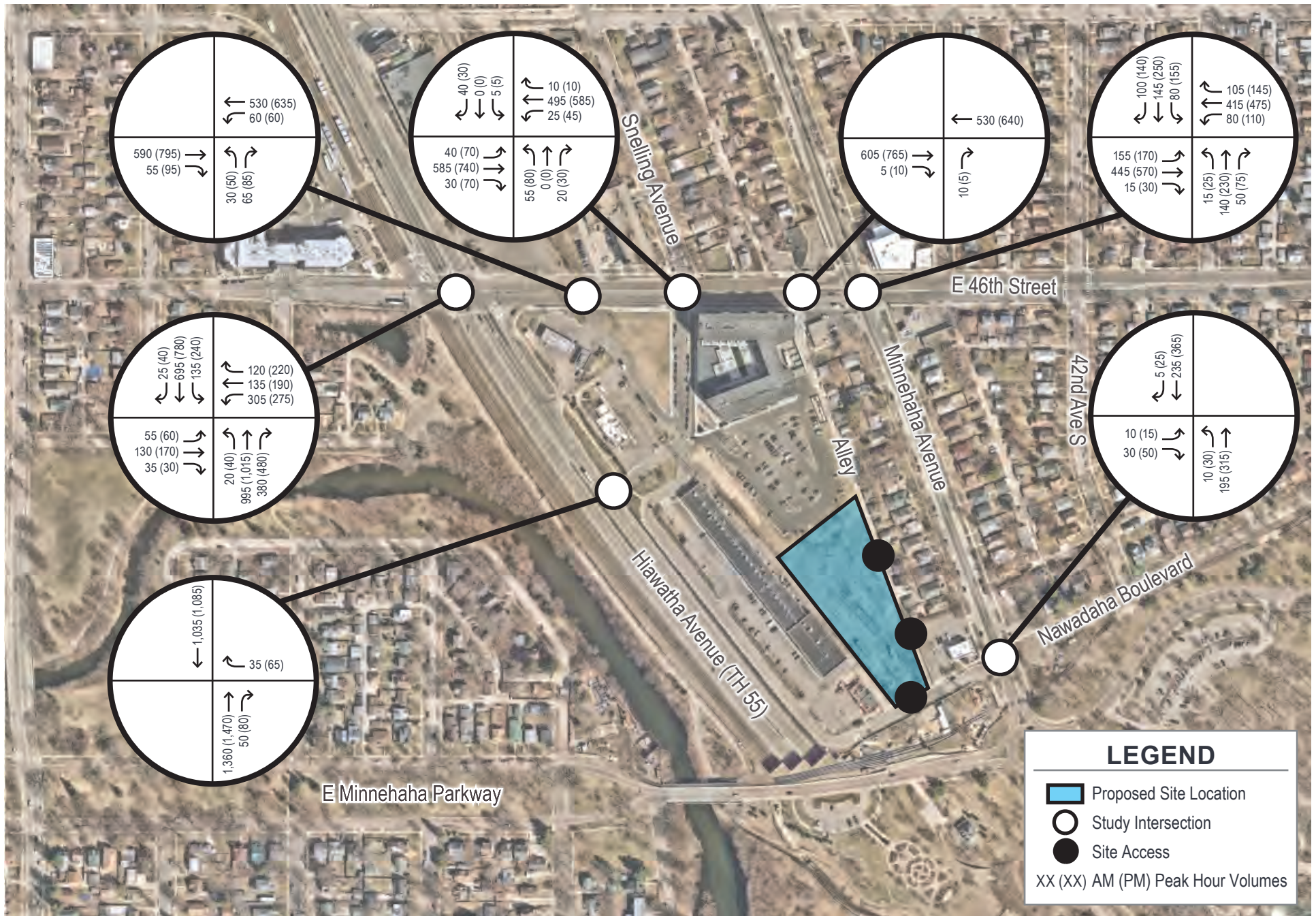


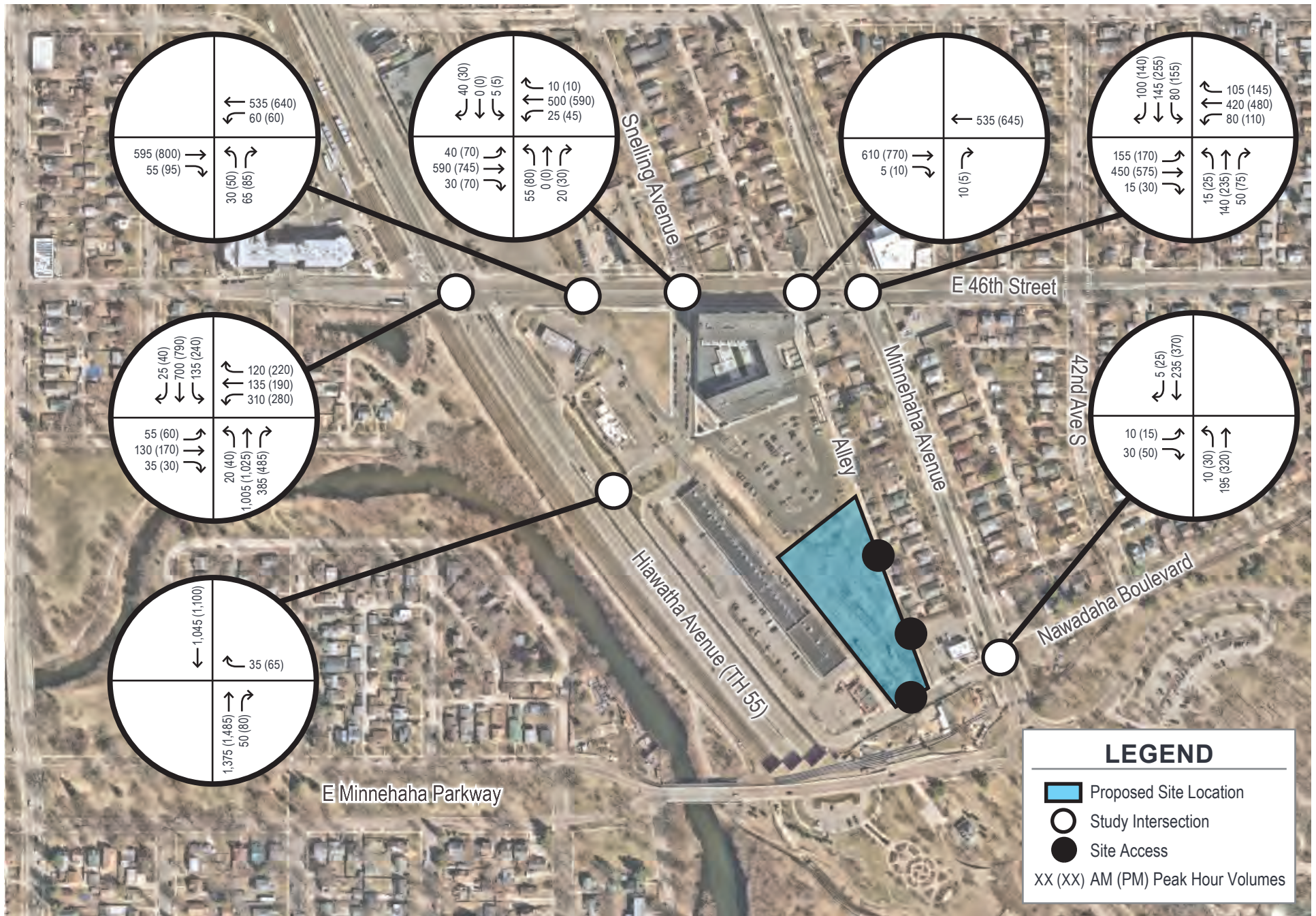


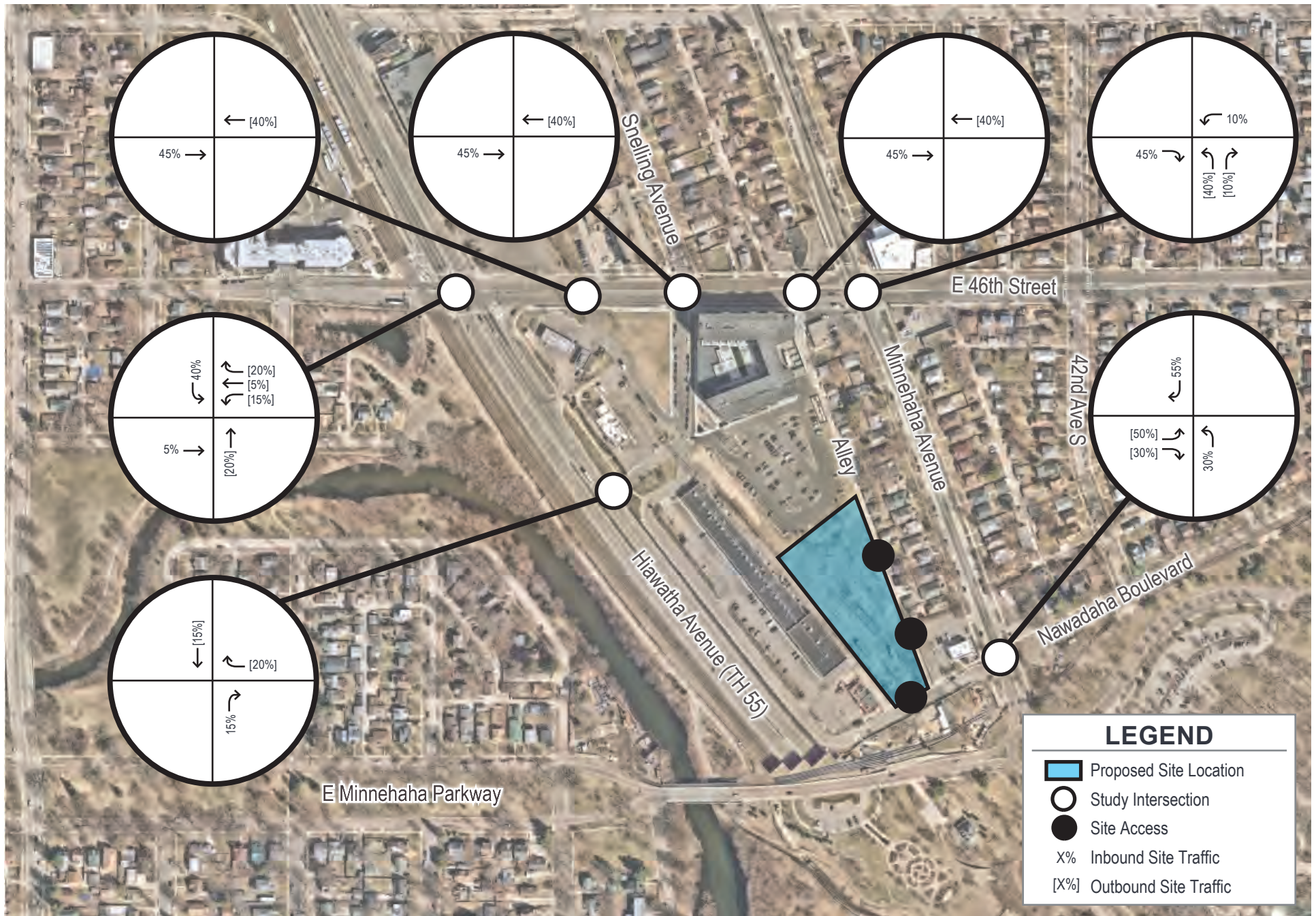


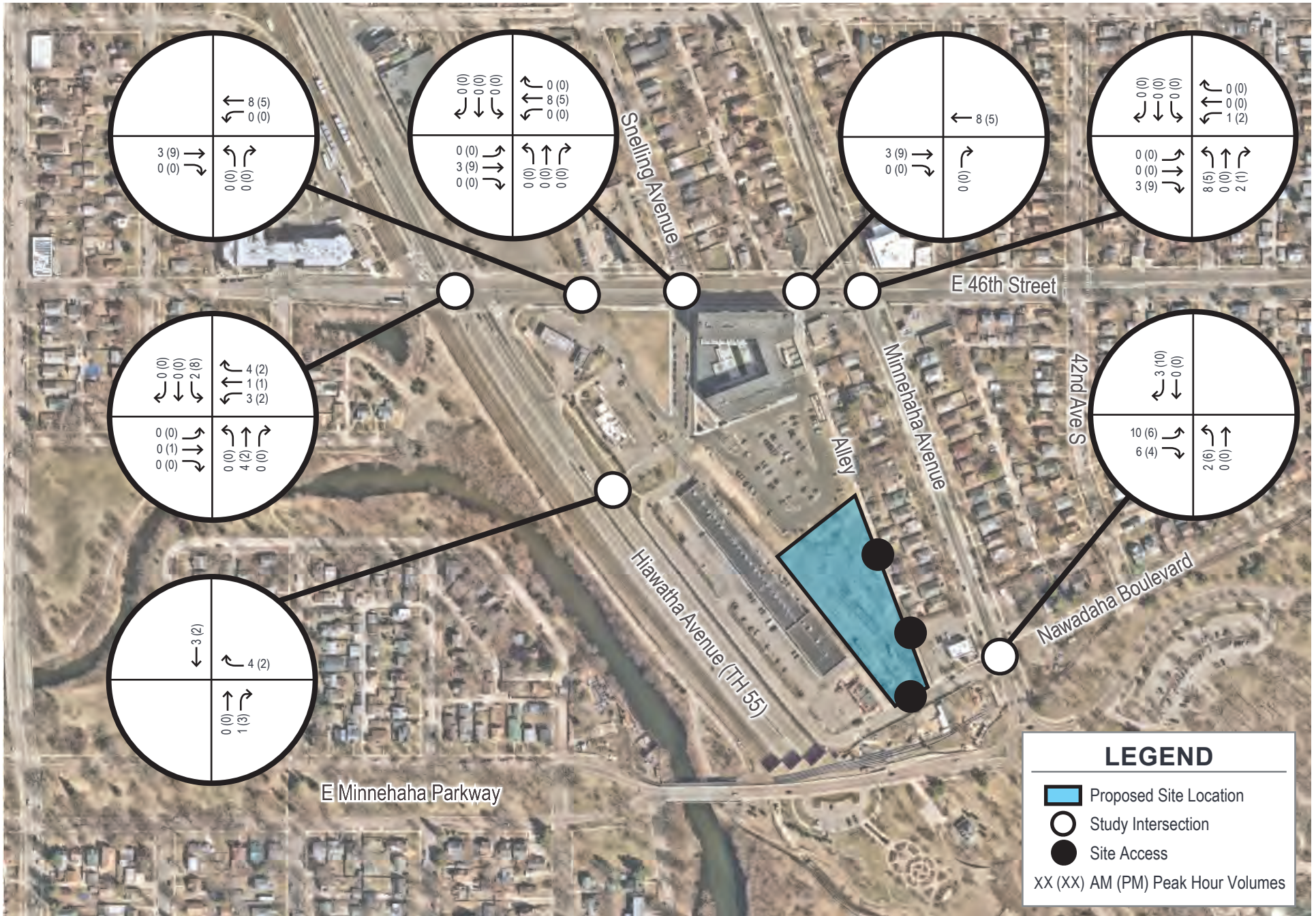


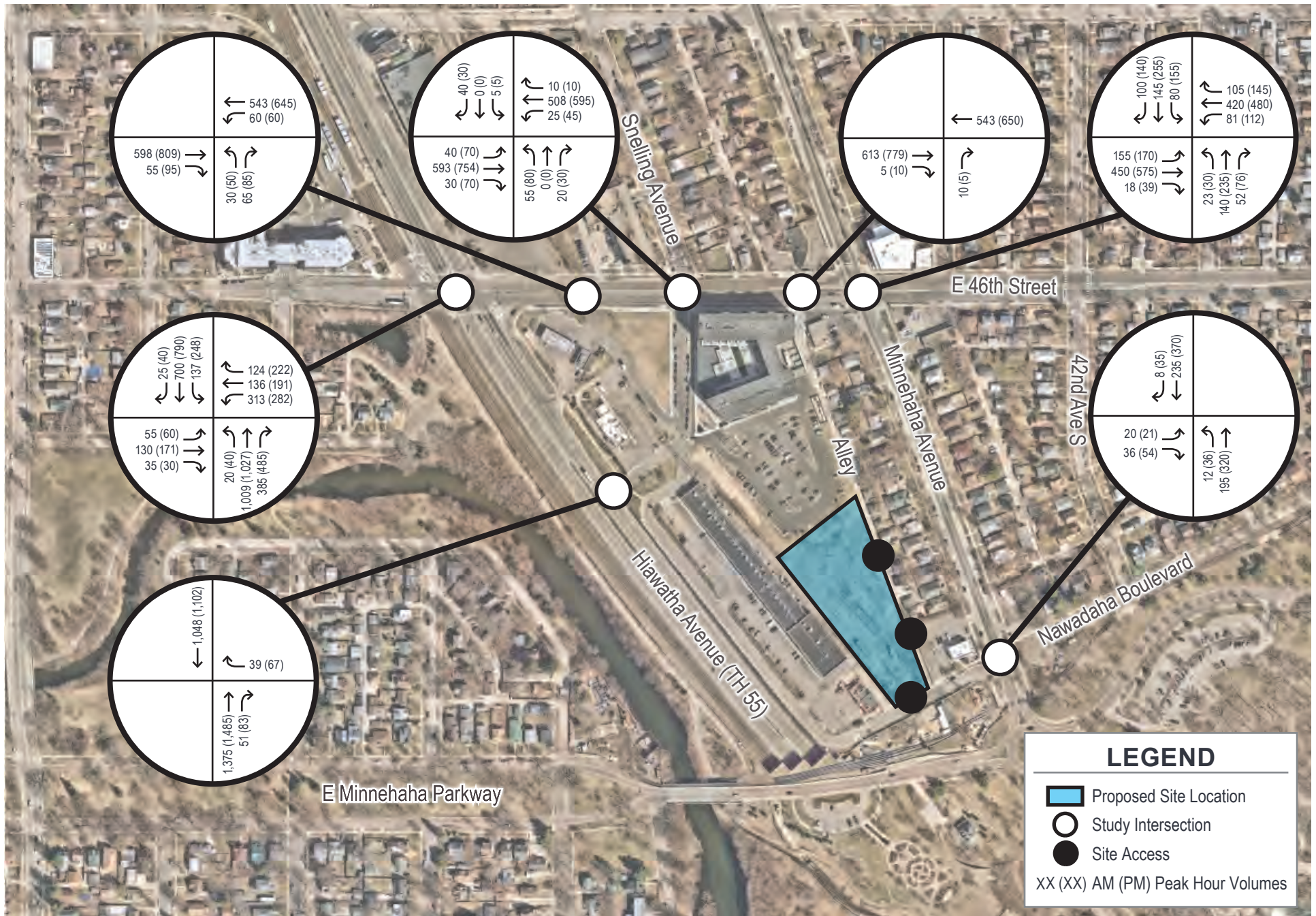








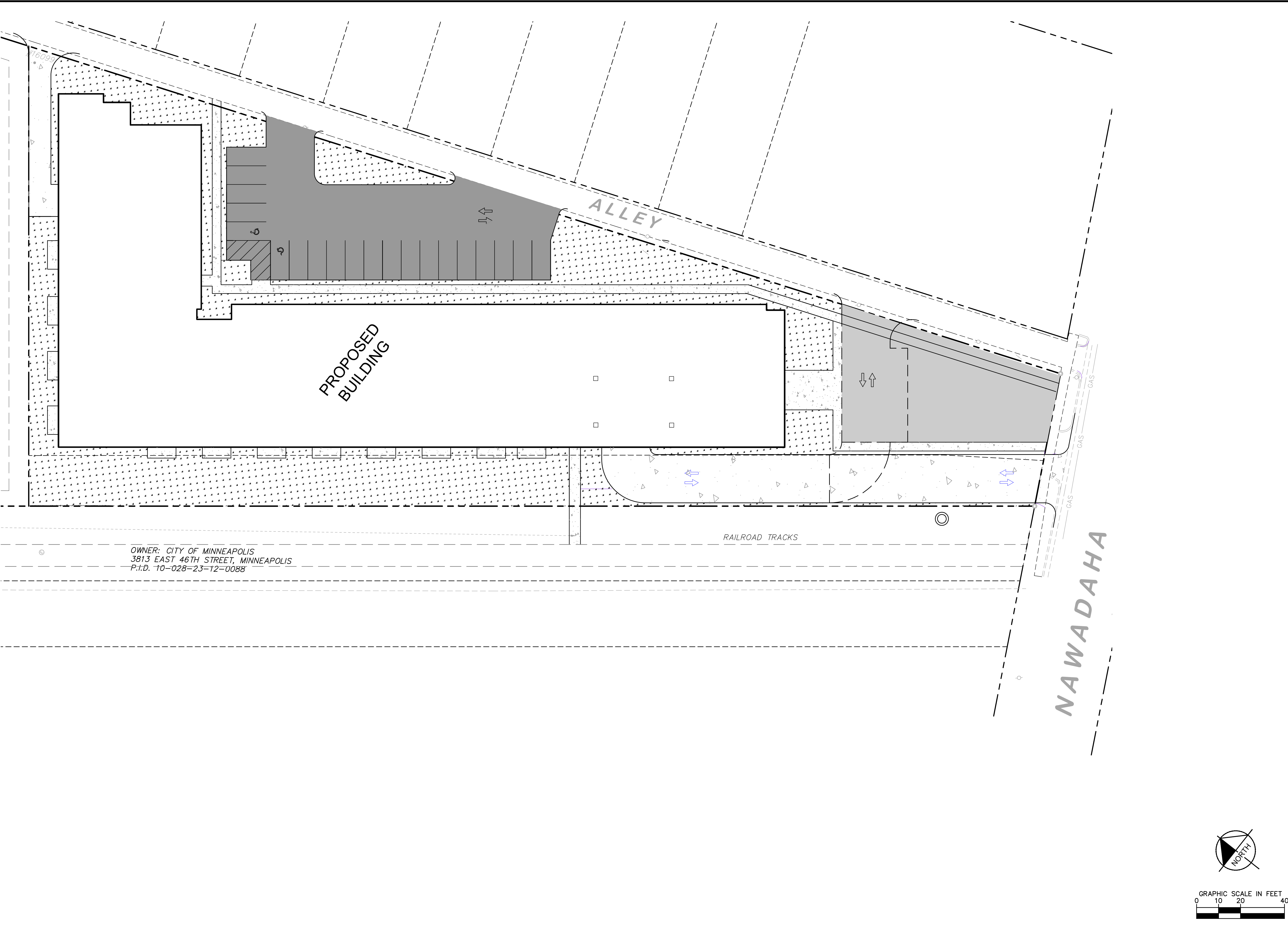




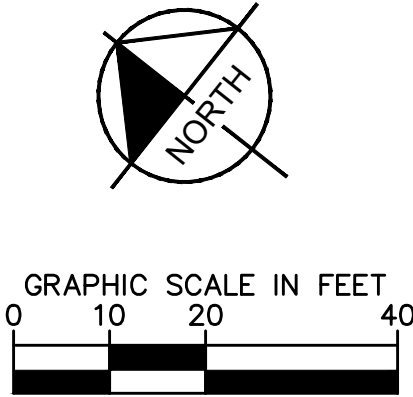
Appendix B: Site Plan



This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



OWNER: CITY OF MINNEAPOLIS
3813 EAST 46TH STREET, MINNEAPOLIS
P.I.D. 10-028-23-12-0088



PRELIMINARY - NOT FOR CONSTRUCTION

| | | | |
|--------------|--|--|-------|
| PROJECT NAME | | SHEET NUMBER | |
| PREPARED FOR | | C400 | |
| CLIENT NAME | | CITY | STATE |
| Kimley»Horn | | © 2018 KIMLEY-HORN AND ASSOCIATES, INC. 787 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114 PHONE: 651-845-4197 WWW.KIMLEY-HORN.COM | |
| KHA PROJECT | | LICENSED PROFESSIONAL ENGINEER | |
| XXXXXXX | | I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. | |
| DATE | | FIRST M. LAST | |
| DD/MM/YYYY | | DATE | |
| SCALE | | M.N. | |
| AS SHOWN | | LIC. NO. | |
| DESIGNED BY | | XXX | |
| DRAWN BY | | XXX | |
| CHECKED BY | | XXX | |
| No. | | REVISIONS | |
| | | DATE | |
| | | BY | |

Appendix C: Raw Traffic Count Data



Turning Movement Data

| Start Time | Hiawatha Avenue Southbound | | | | | | 46th Street Westbound | | | | | | Hiawatha Avenue Northbound | | | | | | 46th Street Eastbound | | | | | | Int. Total |
|-------------------------|-------------------------------|------|------|--------|------|------------|--------------------------|------|------|--------|------|------------|-------------------------------|------|------|--------|------|------------|--------------------------|------|------|--------|------|------------|------------|
| | Right | Thru | Left | U-Turn | Peds | App. Total | Right | Thru | Left | U-Turn | Peds | App. Total | Right | Thru | Left | U-Turn | Peds | App. Total | Right | Thru | Left | U-Turn | Peds | App. Total | |
| 4:00 PM | 11 | 211 | 33 | 1 | 9 | 256 | 30 | 33 | 52 | 0 | 4 | 115 | 98 | 189 | 11 | 0 | 3 | 298 | 7 | 23 | 6 | 0 | 5 | 36 | 705 |
| 4:15 PM | 11 | 224 | 41 | 3 | 17 | 279 | 36 | 30 | 59 | 0 | 5 | 125 | 91 | 229 | 10 | 2 | 3 | 332 | 3 | 28 | 9 | 0 | 3 | 40 | 776 |
| 4:30 PM | 9 | 191 | 47 | 0 | 7 | 247 | 55 | 41 | 52 | 0 | 2 | 148 | 100 | 219 | 4 | 0 | 1 | 323 | 3 | 30 | 10 | 0 | 3 | 43 | 761 |
| 4:45 PM | 7 | 200 | 46 | 2 | 4 | 255 | 41 | 41 | 52 | 0 | 2 | 134 | 115 | 278 | 13 | 1 | 2 | 407 | 5 | 35 | 20 | 0 | 2 | 60 | 856 |
| Hourly Total | 38 | 826 | 167 | 6 | 37 | 1037 | 162 | 145 | 215 | 0 | 13 | 522 | 404 | 915 | 38 | 3 | 9 | 1360 | 18 | 116 | 45 | 0 | 13 | 179 | 3098 |
| 5:00 PM | 8 | 220 | 57 | 1 | 7 | 286 | 49 | 42 | 66 | 0 | 3 | 157 | 109 | 237 | 10 | 0 | 1 | 356 | 8 | 36 | 13 | 0 | 6 | 57 | 856 |
| 5:15 PM | 12 | 165 | 36 | 1 | 7 | 214 | 50 | 41 | 66 | 0 | 2 | 157 | 127 | 258 | 9 | 1 | 4 | 395 | 9 | 29 | 11 | 0 | 1 | 49 | 815 |
| 5:30 PM | 9 | 233 | 47 | 1 | 8 | 290 | 40 | 34 | 73 | 0 | 8 | 147 | 104 | 194 | 12 | 2 | 2 | 312 | 6 | 29 | 14 | 0 | 4 | 49 | 798 |
| 5:45 PM | 9 | 144 | 39 | 3 | 6 | 195 | 47 | 51 | 69 | 0 | 2 | 167 | 73 | 160 | 14 | 2 | 2 | 249 | 2 | 32 | 11 | 0 | 2 | 45 | 656 |
| Hourly Total | 38 | 762 | 179 | 6 | 28 | 985 | 186 | 168 | 274 | 0 | 15 | 628 | 413 | 849 | 45 | 5 | 9 | 1312 | 25 | 126 | 49 | 0 | 13 | 200 | 3125 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 7:00 AM | 6 | 169 | 22 | 3 | 3 | 200 | 32 | 13 | 66 | 0 | 4 | 111 | 52 | 226 | 0 | 2 | 3 | 280 | 8 | 26 | 11 | 0 | 2 | 45 | 636 |
| 7:15 AM | 10 | 173 | 24 | 0 | 10 | 207 | 26 | 14 | 85 | 0 | 9 | 125 | 67 | 225 | 0 | 2 | 0 | 294 | 7 | 24 | 10 | 0 | 0 | 41 | 667 |
| 7:30 AM | 15 | 178 | 31 | 1 | 8 | 225 | 26 | 26 | 59 | 0 | 3 | 111 | 82 | 257 | 3 | 1 | 2 | 343 | 13 | 27 | 10 | 0 | 5 | 50 | 729 |
| 7:45 AM | 9 | 181 | 35 | 1 | 8 | 226 | 26 | 36 | 63 | 0 | 0 | 125 | 91 | 270 | 4 | 1 | 2 | 366 | 7 | 24 | 14 | 0 | 4 | 45 | 762 |
| Hourly Total | 40 | 701 | 112 | 5 | 29 | 858 | 110 | 89 | 273 | 0 | 16 | 472 | 292 | 978 | 7 | 6 | 7 | 1283 | 35 | 101 | 45 | 0 | 11 | 181 | 2794 |
| 8:00 AM | 5 | 189 | 28 | 0 | 8 | 222 | 19 | 20 | 53 | 0 | 1 | 92 | 96 | 231 | 7 | 0 | 4 | 334 | 6 | 27 | 15 | 0 | 3 | 48 | 696 |
| 8:15 AM | 6 | 156 | 28 | 0 | 2 | 190 | 28 | 21 | 59 | 0 | 3 | 108 | 96 | 204 | 1 | 0 | 0 | 301 | 8 | 32 | 14 | 0 | 1 | 54 | 653 |
| 8:30 AM | 2 | 153 | 20 | 0 | 4 | 175 | 18 | 21 | 71 | 0 | 1 | 110 | 82 | 258 | 4 | 0 | 0 | 344 | 9 | 26 | 9 | 0 | 2 | 44 | 673 |
| 8:45 AM | 6 | 166 | 42 | 0 | 2 | 214 | 32 | 21 | 49 | 0 | 2 | 102 | 59 | 169 | 4 | 3 | 0 | 235 | 5 | 28 | 8 | 0 | 2 | 41 | 592 |
| Hourly Total | 19 | 664 | 118 | 0 | 16 | 801 | 97 | 83 | 232 | 0 | 7 | 412 | 333 | 862 | 16 | 3 | 4 | 1214 | 28 | 113 | 46 | 0 | 8 | 187 | 2614 |
| Grand Total | 135 | 2953 | 576 | 17 | 110 | 3681 | 555 | 485 | 994 | 0 | 51 | 2034 | 1442 | 3604 | 106 | 17 | 29 | 5169 | 106 | 456 | 185 | 0 | 45 | 747 | 11631 |
| Approach % | 3.7 | 80.2 | 15.6 | 0.5 | - | - | 27.3 | 23.8 | 48.9 | 0.0 | - | - | 27.9 | 69.7 | 2.1 | 0.3 | - | - | 14.2 | 61.0 | 24.8 | 0.0 | - | - | - |
| Total % | 1.2 | 25.4 | 5.0 | 0.1 | - | 31.6 | 4.8 | 4.2 | 8.5 | 0.0 | - | 17.5 | 12.4 | 31.0 | 0.9 | 0.1 | - | 44.4 | 0.9 | 3.9 | 1.6 | 0.0 | - | 6.4 | - |
| Lights | 118 | 2814 | 564 | 17 | - | 3513 | 547 | 404 | 961 | 0 | - | 1912 | 1404 | 3457 | 92 | 17 | - | 4970 | 93 | 380 | 170 | 0 | - | 643 | 11038 |
| % Lights | 87.4 | 95.3 | 97.9 | 100.0 | - | 95.4 | 98.6 | 83.3 | 96.7 | - | - | 94.0 | 97.4 | 95.9 | 86.8 | 100.0 | - | 96.2 | 87.7 | 83.3 | 91.9 | - | - | 86.1 | 94.9 |
| Mediums | 17 | 68 | 10 | 0 | - | 95 | 6 | 81 | 22 | 0 | - | 109 | 37 | 113 | 13 | 0 | - | 163 | 13 | 76 | 14 | 0 | - | 103 | 470 |
| % Mediums | 12.6 | 2.3 | 1.7 | 0.0 | - | 2.6 | 1.1 | 16.7 | 2.2 | - | - | 5.4 | 2.6 | 3.1 | 12.3 | 0.0 | - | 3.2 | 12.3 | 16.7 | 7.6 | - | - | 13.8 | 4.0 |
| Articulated Trucks | 0 | 71 | 2 | 0 | - | 73 | 2 | 0 | 11 | 0 | - | 13 | 1 | 34 | 1 | 0 | - | 36 | 0 | 0 | 1 | 0 | - | 1 | 123 |
| % Articulated Trucks | 0.0 | 2.4 | 0.3 | 0.0 | - | 2.0 | 0.4 | 0.0 | 1.1 | - | - | 0.6 | 0.1 | 0.9 | 0.9 | 0.0 | - | 0.7 | 0.0 | 0.0 | 0.5 | - | - | 0.1 | 1.1 |
| Bicycles on Crosswalk | - | - | - | - | 6 | - | - | - | - | - | 3 | - | - | - | - | - | 1 | - | - | - | - | - | 9 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | 5.5 | - | - | - | - | - | 5.9 | - | - | - | - | - | 3.4 | - | - | - | - | - | 20.0 | - | - |
| Pedestrians | - | - | - | - | 104 | - | - | - | - | - | 48 | - | - | - | - | - | 28 | - | - | - | - | - | 36 | - | - |
| % Pedestrians | - | - | - | - | 94.5 | - | - | - | - | - | 94.1 | - | - | - | - | - | 96.6 | - | - | - | - | - | 80.0 | - | - |

Kimley-Horn : Lisle (IL)
 1001 Warrenville Road, Suite 350
 Lisle, Illinois, United States 60532
 331.481.7332 Morgan.hoxsie@kimley-horn.com

Count Name: 2_46th Street & Holiday Driveway
 Site Code: 2
 Start Date: 11/08/2016
 Page No: 1

Turning Movement Data

| Start Time | 46th Street Westbound | | | | 46th Street Eastbound | | | | | Holiday Driveway Northbound | | | | Int. Total |
|-------------------------|--------------------------|------|------|------------|--------------------------|------|-------|-------|------------|--------------------------------|-------|-------|------------|------------|
| | Left | Thru | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Right | Peds | App. Total | |
| 7:00 AM | 7 | 113 | 0 | 120 | 0 | 78 | 4 | 0 | 82 | 7 | 8 | 1 | 15 | 217 |
| 7:15 AM | 9 | 119 | 0 | 128 | 0 | 106 | 5 | 0 | 111 | 7 | 12 | 0 | 19 | 258 |
| 7:30 AM | 15 | 86 | 1 | 101 | 0 | 144 | 8 | 0 | 152 | 12 | 13 | 0 | 25 | 278 |
| 7:45 AM | 12 | 104 | 0 | 116 | 0 | 135 | 10 | 0 | 145 | 5 | 12 | 0 | 17 | 278 |
| Hourly Total | 43 | 422 | 1 | 465 | 0 | 463 | 27 | 0 | 490 | 31 | 45 | 1 | 76 | 1031 |
| 8:00 AM | 14 | 105 | 1 | 119 | 0 | 126 | 7 | 0 | 133 | 6 | 11 | 0 | 17 | 269 |
| 8:15 AM | 10 | 127 | 0 | 137 | 0 | 165 | 8 | 2 | 173 | 7 | 21 | 1 | 28 | 338 |
| 8:30 AM | 19 | 134 | 0 | 153 | 0 | 126 | 12 | 0 | 138 | 8 | 18 | 0 | 26 | 317 |
| 8:45 AM | 12 | 105 | 0 | 117 | 0 | 100 | 10 | 0 | 110 | 7 | 13 | 1 | 20 | 247 |
| Hourly Total | 55 | 471 | 1 | 526 | 0 | 517 | 37 | 2 | 554 | 28 | 63 | 2 | 91 | 1171 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 11 | 122 | 0 | 133 | 0 | 142 | 9 | 4 | 151 | 11 | 14 | 6 | 25 | 309 |
| 4:15 PM | 7 | 135 | 2 | 142 | 0 | 139 | 10 | 3 | 149 | 6 | 12 | 0 | 18 | 309 |
| 4:30 PM | 14 | 143 | 1 | 157 | 0 | 183 | 13 | 0 | 196 | 11 | 13 | 0 | 24 | 377 |
| 4:45 PM | 10 | 125 | 0 | 135 | 0 | 155 | 23 | 0 | 178 | 5 | 23 | 1 | 28 | 341 |
| Hourly Total | 42 | 525 | 3 | 567 | 0 | 619 | 55 | 7 | 674 | 33 | 62 | 7 | 95 | 1336 |
| 5:00 PM | 12 | 152 | 0 | 164 | 1 | 163 | 15 | 0 | 179 | 18 | 18 | 0 | 36 | 379 |
| 5:15 PM | 21 | 119 | 2 | 140 | 0 | 164 | 14 | 0 | 178 | 12 | 23 | 3 | 35 | 353 |
| 5:30 PM | 17 | 125 | 1 | 142 | 0 | 140 | 17 | 1 | 157 | 13 | 15 | 0 | 28 | 327 |
| 5:45 PM | 12 | 111 | 0 | 123 | 0 | 144 | 17 | 0 | 161 | 13 | 11 | 0 | 24 | 308 |
| Hourly Total | 62 | 507 | 3 | 569 | 1 | 611 | 63 | 1 | 675 | 56 | 67 | 3 | 123 | 1367 |
| Grand Total | 202 | 1925 | 8 | 2127 | 1 | 2210 | 182 | 10 | 2393 | 148 | 237 | 13 | 385 | 4905 |
| Approach % | 9.5 | 90.5 | - | - | 0.0 | 92.4 | 7.6 | - | - | 38.4 | 61.6 | - | - | - |
| Total % | 4.1 | 39.2 | - | 43.4 | 0.0 | 45.1 | 3.7 | - | 48.8 | 3.0 | 4.8 | - | 7.8 | - |
| Lights | 202 | 1792 | - | 1994 | 1 | 2068 | 177 | - | 2246 | 147 | 232 | - | 379 | 4619 |
| % Lights | 100.0 | 93.1 | - | 93.7 | 100.0 | 93.6 | 97.3 | - | 93.9 | 99.3 | 97.9 | - | 98.4 | 94.2 |
| Mediums | 0 | 127 | - | 127 | 0 | 130 | 5 | - | 135 | 1 | 4 | - | 5 | 267 |
| % Mediums | 0.0 | 6.6 | - | 6.0 | 0.0 | 5.9 | 2.7 | - | 5.6 | 0.7 | 1.7 | - | 1.3 | 5.4 |
| Articulated Trucks | 0 | 6 | - | 6 | 0 | 12 | 0 | - | 12 | 0 | 1 | - | 1 | 19 |
| % Articulated Trucks | 0.0 | 0.3 | - | 0.3 | 0.0 | 0.5 | 0.0 | - | 0.5 | 0.0 | 0.4 | - | 0.3 | 0.4 |
| Bicycles on Crosswalk | - | - | 1 | - | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | 12.5 | - | - | - | - | 0.0 | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | 7 | - | - | - | - | 10 | - | - | - | 13 | - | - |
| % Pedestrians | - | - | 87.5 | - | - | - | - | 100.0 | - | - | - | 100.0 | - | - |

Kimley-Horn : Lisle (IL)
 1001 Warrenville Road, Suite 350
 Lisle, Illinois, United States 60532
 331.481.7332 Morgan.hoxsie@kimley-horn.com

Count Name: 3_46th Street & Existing Driveway
 Site Code: 3
 Start Date: 11/08/2016
 Page No: 1

Turning Movement Data

| Start Time | 46th Street Westbound | | | | 46th Street Eastbound | | | | | Existing Driveway Northbound | | | | Int. Total |
|-------------------------|--------------------------|------|------|------------|--------------------------|------|-------|-------|------------|---------------------------------|-------|------|------------|------------|
| | Left | Thru | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Right | Peds | App. Total | |
| 7:00 AM | 0 | 117 | 0 | 117 | 0 | 89 | 0 | 0 | 89 | 0 | 0 | 1 | 0 | 206 |
| 7:15 AM | 1 | 120 | 0 | 121 | 0 | 114 | 2 | 0 | 116 | 0 | 0 | 5 | 0 | 237 |
| 7:30 AM | 2 | 113 | 0 | 115 | 0 | 157 | 3 | 0 | 160 | 1 | 1 | 2 | 2 | 277 |
| 7:45 AM | 0 | 119 | 0 | 119 | 0 | 133 | 1 | 0 | 134 | 2 | 1 | 1 | 3 | 256 |
| Hourly Total | 3 | 469 | 0 | 472 | 0 | 493 | 6 | 0 | 499 | 3 | 2 | 9 | 5 | 976 |
| 8:00 AM | 0 | 120 | 0 | 120 | 0 | 143 | 1 | 0 | 144 | 1 | 0 | 0 | 1 | 265 |
| 8:15 AM | 3 | 127 | 0 | 130 | 0 | 179 | 5 | 0 | 184 | 0 | 0 | 1 | 0 | 314 |
| 8:30 AM | 1 | 151 | 1 | 152 | 1 | 143 | 2 | 0 | 146 | 0 | 0 | 3 | 0 | 298 |
| 8:45 AM | 3 | 124 | 0 | 127 | 0 | 108 | 2 | 0 | 110 | 1 | 0 | 3 | 1 | 238 |
| Hourly Total | 7 | 522 | 1 | 529 | 1 | 573 | 10 | 0 | 584 | 2 | 0 | 7 | 2 | 1115 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 0 | 122 | 1 | 122 | 0 | 162 | 1 | 0 | 163 | 1 | 2 | 11 | 3 | 288 |
| 4:15 PM | 0 | 143 | 0 | 143 | 0 | 145 | 0 | 0 | 145 | 0 | 0 | 4 | 0 | 288 |
| 4:30 PM | 0 | 143 | 0 | 143 | 0 | 175 | 0 | 0 | 175 | 1 | 2 | 3 | 3 | 321 |
| 4:45 PM | 0 | 140 | 0 | 140 | 0 | 187 | 0 | 0 | 187 | 2 | 2 | 4 | 4 | 331 |
| Hourly Total | 0 | 548 | 1 | 548 | 0 | 669 | 1 | 0 | 670 | 4 | 6 | 22 | 10 | 1228 |
| 5:00 PM | 0 | 149 | 2 | 149 | 0 | 190 | 1 | 0 | 191 | 2 | 4 | 2 | 6 | 346 |
| 5:15 PM | 0 | 155 | 2 | 155 | 0 | 181 | 0 | 0 | 181 | 2 | 1 | 4 | 3 | 339 |
| 5:30 PM | 0 | 137 | 1 | 137 | 0 | 170 | 0 | 1 | 170 | 0 | 1 | 5 | 1 | 308 |
| 5:45 PM | 0 | 128 | 0 | 128 | 0 | 149 | 0 | 0 | 149 | 0 | 0 | 1 | 0 | 277 |
| Hourly Total | 0 | 569 | 5 | 569 | 0 | 690 | 1 | 1 | 691 | 4 | 6 | 12 | 10 | 1270 |
| Grand Total | 10 | 2108 | 7 | 2118 | 1 | 2425 | 18 | 1 | 2444 | 13 | 14 | 50 | 27 | 4589 |
| Approach % | 0.5 | 99.5 | - | - | 0.0 | 99.2 | 0.7 | - | - | 48.1 | 51.9 | - | - | - |
| Total % | 0.2 | 45.9 | - | 46.2 | 0.0 | 52.8 | 0.4 | - | 53.3 | 0.3 | 0.3 | - | 0.6 | - |
| Lights | 9 | 1975 | - | 1984 | 1 | 2281 | 16 | - | 2298 | 11 | 14 | - | 25 | 4307 |
| % Lights | 90.0 | 93.7 | - | 93.7 | 100.0 | 94.1 | 88.9 | - | 94.0 | 84.6 | 100.0 | - | 92.6 | 93.9 |
| Mediums | 1 | 126 | - | 127 | 0 | 136 | 2 | - | 138 | 2 | 0 | - | 2 | 267 |
| % Mediums | 10.0 | 6.0 | - | 6.0 | 0.0 | 5.6 | 11.1 | - | 5.6 | 15.4 | 0.0 | - | 7.4 | 5.8 |
| Articulated Trucks | 0 | 7 | - | 7 | 0 | 8 | 0 | - | 8 | 0 | 0 | - | 0 | 15 |
| % Articulated Trucks | 0.0 | 0.3 | - | 0.3 | 0.0 | 0.3 | 0.0 | - | 0.3 | 0.0 | 0.0 | - | 0.0 | 0.3 |
| Bicycles on Crosswalk | - | - | 3 | - | - | - | - | 0 | - | - | - | 10 | - | - |
| % Bicycles on Crosswalk | - | - | 42.9 | - | - | - | - | 0.0 | - | - | - | 20.0 | - | - |
| Pedestrians | - | - | 4 | - | - | - | - | 1 | - | - | - | 40 | - | - |
| % Pedestrians | - | - | 57.1 | - | - | - | - | 100.0 | - | - | - | 80.0 | - | - |

Turning Movement Data

| Start Time | Snelling Avenue Southbound | | | | | 46th Street Westbound | | | | | 46th Street Eastbound | | | | | Int. Total |
|--------------|-------------------------------|------|--------|------|------------|--------------------------|------|--------|------|------------|--------------------------|------|--------|------|------------|------------|
| | Right | Left | U-Turn | Peds | App. Total | Right | Thru | U-Turn | Peds | App. Total | Thru | Left | U-Turn | Peds | App. Total | |
| 8:00 AM | 6 | 0 | 0 | 3 | 6 | 3 | 110 | 0 | 0 | 113 | 135 | 9 | 0 | 0 | 144 | 263 |
| 8:15 AM | 11 | 0 | 0 | 6 | 11 | 1 | 109 | 0 | 0 | 110 | 170 | 6 | 0 | 0 | 176 | 297 |
| 8:30 AM | 7 | 0 | 0 | 1 | 7 | 1 | 122 | 0 | 0 | 123 | 118 | 7 | 0 | 0 | 125 | 255 |
| 8:45 AM | 7 | 0 | 0 | 4 | 7 | 1 | 95 | 0 | 1 | 96 | 106 | 2 | 0 | 2 | 108 | 211 |
| Hourly Total | 31 | 0 | 0 | 14 | 31 | 6 | 436 | 0 | 1 | 442 | 529 | 24 | 0 | 2 | 553 | 1026 |
| 9:00 AM | 4 | 1 | 0 | 0 | 5 | 1 | 89 | 0 | 0 | 90 | 89 | 1 | 0 | 0 | 90 | 185 |
| 9:15 AM | 10 | 0 | 0 | 1 | 10 | 0 | 100 | 0 | 0 | 100 | 89 | 2 | 0 | 1 | 91 | 201 |
| 9:30 AM | 8 | 1 | 0 | 0 | 9 | 2 | 90 | 0 | 0 | 92 | 85 | 0 | 0 | 1 | 85 | 186 |
| 9:45 AM | 9 | 0 | 0 | 0 | 9 | 0 | 89 | 0 | 0 | 89 | 103 | 3 | 0 | 0 | 106 | 204 |
| Hourly Total | 31 | 2 | 0 | 1 | 33 | 3 | 368 | 0 | 0 | 371 | 366 | 6 | 0 | 2 | 372 | 776 |
| 10:00 AM | 4 | 1 | 0 | 4 | 5 | 2 | 74 | 0 | 0 | 76 | 88 | 1 | 0 | 0 | 89 | 170 |
| 10:15 AM | 2 | 0 | 0 | 4 | 2 | 2 | 80 | 0 | 0 | 82 | 76 | 3 | 1 | 0 | 80 | 164 |
| 10:30 AM | 2 | 0 | 0 | 1 | 2 | 0 | 70 | 0 | 0 | 70 | 78 | 2 | 0 | 0 | 80 | 152 |
| 10:45 AM | 5 | 1 | 0 | 2 | 6 | 0 | 89 | 0 | 0 | 89 | 68 | 2 | 0 | 0 | 70 | 165 |
| Hourly Total | 13 | 2 | 0 | 11 | 15 | 4 | 313 | 0 | 0 | 317 | 310 | 8 | 1 | 0 | 319 | 651 |
| 11:00 AM | 4 | 1 | 0 | 7 | 5 | 0 | 97 | 0 | 1 | 97 | 87 | 3 | 1 | 0 | 91 | 193 |
| 11:15 AM | 18 | 0 | 0 | 2 | 18 | 0 | 67 | 0 | 1 | 67 | 99 | 1 | 0 | 0 | 100 | 185 |
| 11:30 AM | 5 | 1 | 0 | 1 | 6 | 2 | 82 | 0 | 0 | 84 | 98 | 7 | 0 | 0 | 105 | 195 |
| 11:45 AM | 9 | 1 | 0 | 1 | 10 | 1 | 95 | 0 | 0 | 96 | 114 | 3 | 2 | 1 | 119 | 225 |
| Hourly Total | 36 | 3 | 0 | 11 | 39 | 3 | 341 | 0 | 2 | 344 | 398 | 14 | 3 | 1 | 415 | 798 |
| 12:00 PM | 12 | 2 | 0 | 4 | 14 | 0 | 110 | 0 | 0 | 110 | 108 | 2 | 0 | 0 | 110 | 234 |
| 12:15 PM | 11 | 1 | 0 | 2 | 12 | 0 | 88 | 0 | 0 | 88 | 92 | 3 | 0 | 0 | 95 | 195 |
| 12:30 PM | 7 | 1 | 0 | 1 | 8 | 0 | 116 | 0 | 0 | 116 | 98 | 4 | 0 | 0 | 102 | 226 |
| 12:45 PM | 6 | 0 | 0 | 4 | 6 | 0 | 86 | 0 | 0 | 86 | 101 | 1 | 0 | 0 | 102 | 194 |
| Hourly Total | 36 | 4 | 0 | 11 | 40 | 0 | 400 | 0 | 0 | 400 | 399 | 10 | 0 | 0 | 409 | 849 |
| 1:00 PM | 11 | 0 | 0 | 1 | 11 | 7 | 102 | 0 | 1 | 109 | 85 | 3 | 0 | 0 | 88 | 208 |
| 1:15 PM | 8 | 0 | 0 | 2 | 8 | 4 | 106 | 0 | 0 | 110 | 89 | 7 | 0 | 0 | 96 | 214 |
| 1:30 PM | 11 | 0 | 0 | 2 | 11 | 2 | 85 | 0 | 2 | 87 | 87 | 9 | 0 | 0 | 96 | 194 |
| 1:45 PM | 6 | 1 | 0 | 3 | 7 | 0 | 92 | 0 | 0 | 92 | 108 | 6 | 0 | 0 | 114 | 213 |
| Hourly Total | 36 | 1 | 0 | 8 | 37 | 13 | 385 | 0 | 3 | 398 | 369 | 25 | 0 | 0 | 394 | 829 |
| 2:00 PM | 10 | 1 | 0 | 2 | 11 | 2 | 90 | 0 | 0 | 92 | 101 | 10 | 0 | 0 | 111 | 214 |
| 2:15 PM | 6 | 1 | 0 | 4 | 7 | 1 | 94 | 0 | 0 | 95 | 116 | 7 | 0 | 0 | 123 | 225 |
| 2:30 PM | 6 | 0 | 0 | 5 | 6 | 2 | 103 | 0 | 0 | 105 | 119 | 8 | 0 | 0 | 127 | 238 |
| 2:45 PM | 3 | 0 | 0 | 2 | 3 | 0 | 114 | 0 | 0 | 114 | 125 | 4 | 0 | 1 | 129 | 246 |
| Hourly Total | 25 | 2 | 0 | 13 | 27 | 5 | 401 | 0 | 0 | 406 | 461 | 29 | 0 | 1 | 490 | 923 |
| 3:00 PM | 8 | 0 | 0 | 9 | 8 | 1 | 113 | 0 | 1 | 114 | 104 | 3 | 0 | 0 | 107 | 229 |
| 3:15 PM | 6 | 1 | 0 | 5 | 7 | 2 | 146 | 0 | 1 | 148 | 139 | 5 | 1 | 0 | 145 | 300 |
| 3:30 PM | 9 | 1 | 0 | 4 | 10 | 0 | 124 | 0 | 0 | 124 | 149 | 8 | 0 | 0 | 157 | 291 |
| 3:45 PM | 6 | 1 | 0 | 8 | 7 | 0 | 107 | 0 | 1 | 107 | 137 | 6 | 0 | 1 | 143 | 257 |
| Hourly Total | 29 | 3 | 0 | 26 | 32 | 3 | 490 | 0 | 3 | 493 | 529 | 22 | 1 | 1 | 552 | 1077 |
| 4:00 PM | 5 | 1 | 0 | 0 | 6 | 1 | 101 | 0 | 1 | 102 | 153 | 11 | 1 | 0 | 165 | 273 |

| | | | | | | | | | | | | | | | | |
|-------------------------|------|-------|-----|------|------|------|------|-----|-------|------|------|------|-------|------|------|-------|
| 4:15 PM | 11 | 1 | 0 | 3 | 12 | 4 | 122 | 0 | 0 | 126 | 150 | 10 | 0 | 0 | 160 | 298 |
| 4:30 PM | 12 | 0 | 0 | 5 | 12 | 0 | 138 | 0 | 0 | 138 | 164 | 15 | 0 | 0 | 179 | 329 |
| 4:45 PM | 7 | 0 | 0 | 4 | 7 | 4 | 155 | 0 | 0 | 159 | 183 | 17 | 2 | 0 | 202 | 368 |
| Hourly Total | 35 | 2 | 0 | 12 | 37 | 9 | 516 | 0 | 1 | 525 | 650 | 53 | 3 | 0 | 706 | 1268 |
| 5:00 PM | 3 | 0 | 0 | 5 | 3 | 1 | 141 | 0 | 0 | 142 | 194 | 19 | 0 | 0 | 213 | 358 |
| 5:15 PM | 5 | 1 | 0 | 4 | 6 | 4 | 180 | 0 | 0 | 184 | 184 | 12 | 1 | 0 | 197 | 387 |
| 5:30 PM | 18 | 0 | 0 | 5 | 18 | 2 | 139 | 0 | 0 | 141 | 163 | 9 | 2 | 0 | 174 | 333 |
| 5:45 PM | 8 | 1 | 0 | 9 | 9 | 1 | 149 | 0 | 0 | 150 | 133 | 13 | 1 | 0 | 147 | 306 |
| Hourly Total | 34 | 2 | 0 | 23 | 36 | 8 | 609 | 0 | 0 | 617 | 674 | 53 | 4 | 0 | 731 | 1384 |
| 6:00 PM | 10 | 1 | 0 | 5 | 11 | 2 | 135 | 0 | 0 | 137 | 135 | 6 | 0 | 0 | 141 | 289 |
| 6:15 PM | 8 | 0 | 0 | 2 | 8 | 3 | 114 | 0 | 0 | 117 | 138 | 7 | 0 | 1 | 145 | 270 |
| 6:30 PM | 9 | 1 | 0 | 2 | 10 | 3 | 107 | 0 | 0 | 110 | 126 | 6 | 0 | 0 | 132 | 252 |
| 6:45 PM | 4 | 0 | 0 | 4 | 4 | 1 | 118 | 0 | 0 | 119 | 117 | 8 | 2 | 0 | 127 | 250 |
| Hourly Total | 31 | 2 | 0 | 13 | 33 | 9 | 474 | 0 | 0 | 483 | 516 | 27 | 2 | 1 | 545 | 1061 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6:00 AM | 3 | 0 | 0 | 0 | 3 | 1 | 48 | 0 | 1 | 49 | 40 | 1 | 0 | 0 | 41 | 93 |
| 6:15 AM | 6 | 1 | 0 | 1 | 7 | 0 | 64 | 0 | 1 | 64 | 62 | 5 | 0 | 0 | 67 | 138 |
| 6:30 AM | 8 | 2 | 0 | 1 | 10 | 0 | 66 | 0 | 0 | 66 | 80 | 3 | 0 | 0 | 83 | 159 |
| 6:45 AM | 12 | 0 | 0 | 1 | 12 | 5 | 90 | 0 | 1 | 95 | 84 | 5 | 0 | 0 | 89 | 196 |
| Hourly Total | 29 | 3 | 0 | 3 | 32 | 6 | 268 | 0 | 3 | 274 | 266 | 14 | 0 | 0 | 280 | 586 |
| 7:00 AM | 13 | 3 | 0 | 4 | 16 | 0 | 128 | 0 | 1 | 128 | 89 | 8 | 0 | 0 | 97 | 241 |
| 7:15 AM | 14 | 0 | 0 | 3 | 14 | 1 | 103 | 0 | 1 | 104 | 110 | 8 | 0 | 0 | 118 | 236 |
| 7:30 AM | 12 | 1 | 0 | 5 | 13 | 3 | 118 | 0 | 0 | 121 | 135 | 6 | 0 | 0 | 141 | 275 |
| 7:45 AM | 13 | 2 | 0 | 1 | 15 | 1 | 101 | 0 | 0 | 102 | 142 | 13 | 0 | 0 | 155 | 272 |
| Hourly Total | 52 | 6 | 0 | 13 | 58 | 5 | 450 | 0 | 2 | 455 | 476 | 35 | 0 | 0 | 511 | 1024 |
| Grand Total | 418 | 32 | 0 | 159 | 450 | 74 | 5451 | 0 | 15 | 5525 | 5943 | 320 | 14 | 8 | 6277 | 12252 |
| Approach % | 92.9 | 7.1 | 0.0 | - | - | 1.3 | 98.7 | 0.0 | - | - | 94.7 | 5.1 | 0.2 | - | - | - |
| Total % | 3.4 | 0.3 | 0.0 | - | 3.7 | 0.6 | 44.5 | 0.0 | - | 45.1 | 48.5 | 2.6 | 0.1 | - | 51.2 | - |
| Lights | 393 | 32 | 0 | - | 425 | 70 | 5059 | 0 | - | 5129 | 5555 | 308 | 14 | - | 5877 | 11431 |
| % Lights | 94.0 | 100.0 | - | - | 94.4 | 94.6 | 92.8 | - | - | 92.8 | 93.5 | 96.3 | 100.0 | - | 93.6 | 93.3 |
| Mediums | 24 | 0 | 0 | - | 24 | 4 | 367 | 0 | - | 371 | 372 | 11 | 0 | - | 383 | 778 |
| % Mediums | 5.7 | 0.0 | - | - | 5.3 | 5.4 | 6.7 | - | - | 6.7 | 6.3 | 3.4 | 0.0 | - | 6.1 | 6.3 |
| Articulated Trucks | 1 | 0 | 0 | - | 1 | 0 | 25 | 0 | - | 25 | 16 | 1 | 0 | - | 17 | 43 |
| % Articulated Trucks | 0.2 | 0.0 | - | - | 0.2 | 0.0 | 0.5 | - | - | 0.5 | 0.3 | 0.3 | 0.0 | - | 0.3 | 0.4 |
| Bicycles on Crosswalk | - | - | - | 7 | - | - | - | - | 0 | - | - | - | - | 1 | - | - |
| % Bicycles on Crosswalk | - | - | - | 4.4 | - | - | - | - | 0.0 | - | - | - | - | 12.5 | - | - |
| Pedestrians | - | - | - | 152 | - | - | - | - | 15 | - | - | - | - | 7 | - | - |
| % Pedestrians | - | - | - | 95.6 | - | - | - | - | 100.0 | - | - | - | - | 87.5 | - | - |

Turning Movement Peak Hour Data (8:00 AM)

| Start Time | Snelling Avenue Southbound | | | | | 46th Street Westbound | | | | | 46th Street Eastbound | | | | | Int. Total |
|-------------------------|-------------------------------|-------|--------|-------|------------|--------------------------|-------|--------|-------|------------|--------------------------|-------|--------|-------|------------|------------|
| | Right | Left | U-Turn | Peds | App. Total | Right | Thru | U-Turn | Peds | App. Total | Thru | Left | U-Turn | Peds | App. Total | |
| 8:00 AM | 6 | 0 | 0 | 3 | 6 | 3 | 110 | 0 | 0 | 113 | 135 | 9 | 0 | 0 | 144 | 263 |
| 8:15 AM | 11 | 0 | 0 | 6 | 11 | 1 | 109 | 0 | 0 | 110 | 170 | 6 | 0 | 0 | 176 | 297 |
| 8:30 AM | 7 | 0 | 0 | 1 | 7 | 1 | 122 | 0 | 0 | 123 | 118 | 7 | 0 | 0 | 125 | 255 |
| 8:45 AM | 7 | 0 | 0 | 4 | 7 | 1 | 95 | 0 | 1 | 96 | 106 | 2 | 0 | 2 | 108 | 211 |
| Total | 31 | 0 | 0 | 14 | 31 | 6 | 436 | 0 | 1 | 442 | 529 | 24 | 0 | 2 | 553 | 1026 |
| Approach % | 100.0 | 0.0 | 0.0 | - | - | 1.4 | 98.6 | 0.0 | - | - | 95.7 | 4.3 | 0.0 | - | - | - |
| Total % | 3.0 | 0.0 | 0.0 | - | 3.0 | 0.6 | 42.5 | 0.0 | - | 43.1 | 51.6 | 2.3 | 0.0 | - | 53.9 | - |
| PHF | 0.705 | 0.000 | 0.000 | - | 0.705 | 0.500 | 0.893 | 0.000 | - | 0.898 | 0.778 | 0.667 | 0.000 | - | 0.786 | 0.864 |
| Lights | 28 | 0 | 0 | - | 28 | 6 | 403 | 0 | - | 409 | 486 | 24 | 0 | - | 510 | 947 |
| % Lights | 90.3 | - | - | - | 90.3 | 100.0 | 92.4 | - | - | 92.5 | 91.9 | 100.0 | - | - | 92.2 | 92.3 |
| Mediums | 3 | 0 | 0 | - | 3 | 0 | 31 | 0 | - | 31 | 42 | 0 | 0 | - | 42 | 76 |
| % Mediums | 9.7 | - | - | - | 9.7 | 0.0 | 7.1 | - | - | 7.0 | 7.9 | 0.0 | - | - | 7.6 | 7.4 |
| Articulated Trucks | 0 | 0 | 0 | - | 0 | 0 | 2 | 0 | - | 2 | 1 | 0 | 0 | - | 1 | 3 |
| % Articulated Trucks | 0.0 | - | - | - | 0.0 | 0.0 | 0.5 | - | - | 0.5 | 0.2 | 0.0 | - | - | 0.2 | 0.3 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 14 | - | - | - | - | 1 | - | - | - | - | 2 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |

Count Name: 4_46th Street & Snelling Avenue
Site Code: 4
Start Date: 11/09/2016
Page No: 6

46th Street
Westbound

[illegible]

Turning Movement Peak Hour Data (7:00 AM)

| Start Time | Snelling Avenue Southbound | | | | | 46th Street Westbound | | | | | 46th Street Eastbound | | | | | Int. Total |
|-------------------------|-------------------------------|-------|--------|-------|------------|--------------------------|-------|--------|-------|------------|--------------------------|-------|--------|------|------------|------------|
| | Right | Left | U-Turn | Peds | App. Total | Right | Thru | U-Turn | Peds | App. Total | Thru | Left | U-Turn | Peds | App. Total | |
| 7:00 AM | 13 | 3 | 0 | 4 | 16 | 0 | 128 | 0 | 1 | 128 | 89 | 8 | 0 | 0 | 97 | 241 |
| 7:15 AM | 14 | 0 | 0 | 3 | 14 | 1 | 103 | 0 | 1 | 104 | 110 | 8 | 0 | 0 | 118 | 236 |
| 7:30 AM | 12 | 1 | 0 | 5 | 13 | 3 | 118 | 0 | 0 | 121 | 135 | 6 | 0 | 0 | 141 | 275 |
| 7:45 AM | 13 | 2 | 0 | 1 | 15 | 1 | 101 | 0 | 0 | 102 | 142 | 13 | 0 | 0 | 155 | 272 |
| Total | 52 | 6 | 0 | 13 | 58 | 5 | 450 | 0 | 2 | 455 | 476 | 35 | 0 | 0 | 511 | 1024 |
| Approach % | 89.7 | 10.3 | 0.0 | - | - | 1.1 | 98.9 | 0.0 | - | - | 93.2 | 6.8 | 0.0 | - | - | - |
| Total % | 5.1 | 0.6 | 0.0 | - | 5.7 | 0.5 | 43.9 | 0.0 | - | 44.4 | 46.5 | 3.4 | 0.0 | - | 49.9 | - |
| PHF | 0.929 | 0.500 | 0.000 | - | 0.906 | 0.417 | 0.879 | 0.000 | - | 0.889 | 0.838 | 0.673 | 0.000 | - | 0.824 | 0.931 |
| Lights | 50 | 6 | 0 | - | 56 | 5 | 423 | 0 | - | 428 | 441 | 35 | 0 | - | 476 | 960 |
| % Lights | 96.2 | 100.0 | - | - | 96.6 | 100.0 | 94.0 | - | - | 94.1 | 92.6 | 100.0 | - | - | 93.2 | 93.8 |
| Mediums | 2 | 0 | 0 | - | 2 | 0 | 24 | 0 | - | 24 | 33 | 0 | 0 | - | 33 | 59 |
| % Mediums | 3.8 | 0.0 | - | - | 3.4 | 0.0 | 5.3 | - | - | 5.3 | 6.9 | 0.0 | - | - | 6.5 | 5.8 |
| Articulated Trucks | 0 | 0 | 0 | - | 0 | 0 | 3 | 0 | - | 3 | 2 | 0 | 0 | - | 2 | 5 |
| % Articulated Trucks | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 0.7 | - | - | 0.7 | 0.4 | 0.0 | - | - | 0.4 | 0.5 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - | - | - | - | - | - |
| Pedestrians | - | - | - | 13 | - | - | - | - | 2 | - | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | - | - | - |

Turning Movement Data

| Start Time | Minnehaha Avenue Southbound | | | | | | 46th Street Westbound | | | | | | Minnehaha Avenue Northbound | | | | | | 46th Street Eastbound | | | | | | Int. Total |
|-------------------------|-----------------------------|------|------|--------|------|------------|-----------------------|------|------|--------|------|------------|-----------------------------|------|------|--------|------|------------|-----------------------|------|------|--------|------|------------|------------|
| | Right | Thru | Left | U-Turn | Peds | App. Total | Right | Thru | Left | U-Turn | Peds | App. Total | Right | Thru | Left | U-Turn | Peds | App. Total | Right | Thru | Left | U-Turn | Peds | App. Total | |
| 7:00 AM | 14 | 25 | 8 | 0 | 0 | 47 | 11 | 89 | 13 | 0 | 0 | 113 | 3 | 23 | 3 | 0 | 1 | 29 | 6 | 65 | 14 | 0 | 0 | 85 | 274 |
| 7:15 AM | 28 | 32 | 17 | 0 | 7 | 77 | 19 | 88 | 22 | 0 | 0 | 129 | 2 | 31 | 2 | 0 | 0 | 35 | 3 | 76 | 23 | 0 | 3 | 102 | 343 |
| 7:30 AM | 18 | 31 | 20 | 0 | 4 | 69 | 45 | 62 | 22 | 0 | 0 | 129 | 8 | 24 | 3 | 0 | 0 | 35 | 0 | 112 | 38 | 0 | 1 | 150 | 383 |
| 7:45 AM | 21 | 39 | 23 | 0 | 3 | 83 | 22 | 94 | 15 | 0 | 0 | 131 | 10 | 45 | 3 | 0 | 1 | 58 | 0 | 93 | 39 | 0 | 1 | 132 | 404 |
| Hourly Total | 81 | 127 | 68 | 0 | 14 | 276 | 97 | 333 | 72 | 0 | 0 | 502 | 23 | 123 | 11 | 0 | 2 | 157 | 9 | 346 | 114 | 0 | 5 | 469 | 1404 |
| 8:00 AM | 12 | 27 | 23 | 0 | 0 | 62 | 30 | 93 | 24 | 0 | 0 | 147 | 14 | 44 | 3 | 0 | 0 | 61 | 6 | 96 | 30 | 0 | 1 | 132 | 402 |
| 8:15 AM | 20 | 32 | 19 | 0 | 1 | 71 | 17 | 92 | 13 | 0 | 0 | 122 | 13 | 22 | 3 | 0 | 1 | 38 | 3 | 138 | 34 | 0 | 1 | 175 | 406 |
| 8:30 AM | 29 | 36 | 13 | 0 | 1 | 78 | 31 | 118 | 24 | 0 | 0 | 173 | 8 | 25 | 3 | 0 | 0 | 36 | 3 | 102 | 37 | 0 | 2 | 142 | 429 |
| 8:45 AM | 19 | 28 | 10 | 0 | 0 | 57 | 17 | 88 | 13 | 0 | 0 | 118 | 4 | 19 | 2 | 0 | 0 | 25 | 6 | 80 | 22 | 0 | 3 | 108 | 308 |
| Hourly Total | 80 | 123 | 65 | 0 | 2 | 268 | 95 | 391 | 74 | 0 | 0 | 560 | 39 | 110 | 11 | 0 | 1 | 160 | 18 | 416 | 123 | 0 | 7 | 557 | 1545 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 23 | 52 | 15 | 0 | 7 | 90 | 21 | 93 | 23 | 0 | 6 | 137 | 19 | 43 | 8 | 0 | 5 | 70 | 5 | 104 | 39 | 0 | 6 | 148 | 445 |
| 4:15 PM | 32 | 53 | 26 | 0 | 3 | 111 | 34 | 96 | 21 | 0 | 2 | 151 | 20 | 53 | 9 | 0 | 1 | 82 | 0 | 103 | 33 | 1 | 5 | 137 | 481 |
| 4:30 PM | 25 | 72 | 36 | 0 | 8 | 133 | 38 | 113 | 17 | 0 | 3 | 168 | 13 | 56 | 5 | 0 | 1 | 74 | 7 | 137 | 33 | 0 | 2 | 177 | 552 |
| 4:45 PM | 23 | 66 | 40 | 0 | 3 | 129 | 33 | 98 | 24 | 0 | 0 | 155 | 21 | 65 | 8 | 0 | 1 | 94 | 7 | 131 | 31 | 0 | 6 | 169 | 547 |
| Hourly Total | 103 | 243 | 117 | 0 | 21 | 463 | 126 | 400 | 85 | 0 | 11 | 611 | 73 | 217 | 30 | 0 | 8 | 320 | 19 | 475 | 136 | 1 | 19 | 631 | 2025 |
| 5:00 PM | 30 | 53 | 34 | 0 | 5 | 117 | 35 | 106 | 30 | 0 | 6 | 171 | 13 | 45 | 6 | 0 | 1 | 64 | 4 | 137 | 38 | 0 | 4 | 179 | 531 |
| 5:15 PM | 20 | 55 | 42 | 0 | 0 | 117 | 35 | 107 | 36 | 0 | 0 | 178 | 25 | 54 | 2 | 0 | 4 | 81 | 6 | 121 | 38 | 0 | 11 | 165 | 541 |
| 5:30 PM | 25 | 40 | 37 | 0 | 2 | 102 | 26 | 108 | 21 | 0 | 1 | 155 | 15 | 35 | 9 | 0 | 2 | 59 | 2 | 128 | 33 | 0 | 6 | 163 | 479 |
| 5:45 PM | 23 | 51 | 26 | 0 | 6 | 100 | 26 | 83 | 21 | 0 | 1 | 130 | 20 | 37 | 6 | 0 | 1 | 63 | 3 | 107 | 23 | 0 | 4 | 133 | 426 |
| Hourly Total | 98 | 199 | 139 | 0 | 13 | 436 | 122 | 404 | 108 | 0 | 8 | 634 | 73 | 171 | 23 | 0 | 8 | 267 | 15 | 493 | 132 | 0 | 25 | 640 | 1977 |
| Grand Total | 362 | 692 | 389 | 0 | 50 | 1443 | 440 | 1528 | 339 | 0 | 19 | 2307 | 208 | 621 | 75 | 0 | 19 | 904 | 61 | 1730 | 505 | 1 | 56 | 2297 | 6951 |
| Approach % | 25.1 | 48.0 | 27.0 | 0.0 | - | - | 19.1 | 66.2 | 14.7 | 0.0 | - | - | 23.0 | 68.7 | 8.3 | 0.0 | - | - | 2.7 | 75.3 | 22.0 | 0.0 | - | - | - |
| Total % | 5.2 | 10.0 | 5.6 | 0.0 | - | 20.8 | 6.3 | 22.0 | 4.9 | 0.0 | - | 33.2 | 3.0 | 8.9 | 1.1 | 0.0 | - | 13.0 | 0.9 | 24.9 | 7.3 | 0.0 | - | 33.0 | - |
| Lights | 334 | 674 | 386 | 0 | - | 1394 | 432 | 1426 | 331 | 0 | - | 2189 | 202 | 600 | 72 | 0 | - | 874 | 55 | 1620 | 477 | 1 | - | 2153 | 6610 |
| % Lights | 92.3 | 97.4 | 99.2 | - | - | 96.6 | 98.2 | 93.3 | 97.6 | - | - | 94.9 | 97.1 | 96.6 | 96.0 | - | - | 96.7 | 90.2 | 93.6 | 94.5 | 100.0 | - | 93.7 | 95.1 |
| Mediums | 27 | 9 | 2 | 0 | - | 38 | 7 | 87 | 7 | 0 | - | 101 | 5 | 9 | 1 | 0 | - | 15 | 4 | 98 | 27 | 0 | - | 129 | 283 |
| % Mediums | 7.5 | 1.3 | 0.5 | - | - | 2.6 | 1.6 | 5.7 | 2.1 | - | - | 4.4 | 2.4 | 1.4 | 1.3 | - | - | 1.7 | 6.6 | 5.7 | 5.3 | 0.0 | - | 5.6 | 4.1 |
| Articulated Trucks | 0 | 1 | 0 | 0 | - | 1 | 0 | 14 | 0 | 0 | - | 14 | 0 | 0 | 1 | 0 | - | 1 | 1 | 11 | 1 | 0 | - | 13 | 29 |
| % Articulated Trucks | 0.0 | 0.1 | 0.0 | - | - | 0.1 | 0.0 | 0.9 | 0.0 | - | - | 0.6 | 0.0 | 0.0 | 1.3 | - | - | 0.1 | 1.6 | 0.6 | 0.2 | 0.0 | - | 0.6 | 0.4 |
| Bicycles on Road | 1 | 8 | 1 | 0 | - | 10 | 1 | 1 | 1 | 0 | - | 3 | 1 | 12 | 1 | 0 | - | 14 | 1 | 1 | 0 | 0 | - | 2 | 29 |
| % Bicycles on Road | 0.3 | 1.2 | 0.3 | - | - | 0.7 | 0.2 | 0.1 | 0.3 | - | - | 0.1 | 0.5 | 1.9 | 1.3 | - | - | 1.5 | 1.6 | 0.1 | 0.0 | 0.0 | - | 0.1 | 0.4 |
| Bicycles on Crosswalk | - | - | - | - | 3 | - | - | - | - | - | 1 | - | - | - | - | - | 3 | - | - | - | - | - | 3 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | 6.0 | - | - | - | - | - | 5.3 | - | - | - | - | - | 15.8 | - | - | - | - | - | 5.4 | - | - |
| Pedestrians | - | - | - | - | 47 | - | - | - | - | - | 18 | - | - | - | - | - | 16 | - | - | - | - | - | 53 | - | - |
| % Pedestrians | - | - | - | - | 94.0 | - | - | - | - | - | 94.7 | - | - | - | - | - | 84.2 | - | - | - | - | - | 94.6 | - | - |

Turning Movement Peak Hour Data (7:45 AM)

| Start Time | Minnehaha Avenue Southbound | | | | | | 46th Street Westbound | | | | | | Minnehaha Avenue Northbound | | | | | | 46th Street Eastbound | | | | | | Int. Total |
|-------------------------|-----------------------------|-------|-------|--------|-------|------------|-----------------------|-------|-------|--------|------|------------|-----------------------------|-------|-------|--------|-------|------------|-----------------------|-------|-------|--------|------|------------|------------|
| | Right | Thru | Left | U-Turn | Peds | App. Total | Right | Thru | Left | U-Turn | Peds | App. Total | Right | Thru | Left | U-Turn | Peds | App. Total | Right | Thru | Left | U-Turn | Peds | App. Total | |
| 7:45 AM | 21 | 39 | 23 | 0 | 3 | 83 | 22 | 94 | 15 | 0 | 0 | 131 | 10 | 45 | 3 | 0 | 1 | 58 | 0 | 93 | 39 | 0 | 1 | 132 | 404 |
| 8:00 AM | 12 | 27 | 23 | 0 | 0 | 62 | 30 | 93 | 24 | 0 | 0 | 147 | 14 | 44 | 3 | 0 | 0 | 61 | 6 | 96 | 30 | 0 | 1 | 132 | 402 |
| 8:15 AM | 20 | 32 | 19 | 0 | 1 | 71 | 17 | 92 | 13 | 0 | 0 | 122 | 13 | 22 | 3 | 0 | 1 | 38 | 3 | 138 | 34 | 0 | 1 | 175 | 406 |
| 8:30 AM | 29 | 36 | 13 | 0 | 1 | 78 | 31 | 118 | 24 | 0 | 0 | 173 | 8 | 25 | 3 | 0 | 0 | 36 | 3 | 102 | 37 | 0 | 2 | 142 | 429 |
| Total | 82 | 134 | 78 | 0 | 5 | 294 | 100 | 397 | 76 | 0 | 0 | 573 | 45 | 136 | 12 | 0 | 2 | 193 | 12 | 429 | 140 | 0 | 5 | 581 | 1641 |
| Approach % | 27.9 | 45.6 | 26.5 | 0.0 | - | - | 17.5 | 69.3 | 13.3 | 0.0 | - | - | 23.3 | 70.5 | 6.2 | 0.0 | - | - | 2.1 | 73.8 | 24.1 | 0.0 | - | - | - |
| Total % | 5.0 | 8.2 | 4.8 | 0.0 | - | 17.9 | 6.1 | 24.2 | 4.6 | 0.0 | - | 34.9 | 2.7 | 8.3 | 0.7 | 0.0 | - | 11.8 | 0.7 | 26.1 | 8.5 | 0.0 | - | 35.4 | - |
| PHF | 0.707 | 0.859 | 0.848 | 0.000 | - | 0.886 | 0.806 | 0.841 | 0.792 | 0.000 | - | 0.828 | 0.804 | 0.756 | 1.000 | 0.000 | - | 0.791 | 0.500 | 0.777 | 0.897 | 0.000 | - | 0.830 | 0.956 |
| Lights | 75 | 126 | 78 | 0 | - | 279 | 100 | 361 | 73 | 0 | - | 534 | 41 | 130 | 11 | 0 | - | 182 | 10 | 387 | 131 | 0 | - | 528 | 1523 |
| % Lights | 91.5 | 94.0 | 100.0 | - | - | 94.9 | 100.0 | 90.9 | 96.1 | - | - | 93.2 | 91.1 | 95.6 | 91.7 | - | - | 94.3 | 83.3 | 90.2 | 93.6 | - | - | 90.9 | 92.8 |
| Mediums | 7 | 7 | 0 | 0 | - | 14 | 0 | 29 | 3 | 0 | - | 32 | 4 | 4 | 1 | 0 | - | 9 | 1 | 39 | 8 | 0 | - | 48 | 103 |
| % Mediums | 8.5 | 5.2 | 0.0 | - | - | 4.8 | 0.0 | 7.3 | 3.9 | - | - | 5.6 | 8.9 | 2.9 | 8.3 | - | - | 4.7 | 8.3 | 9.1 | 5.7 | - | - | 8.3 | 6.3 |
| Articulated Trucks | 0 | 0 | 0 | 0 | - | 0 | 0 | 7 | 0 | 0 | - | 7 | 0 | 0 | 0 | 0 | - | 0 | 0 | 3 | 1 | 0 | - | 4 | 11 |
| % Articulated Trucks | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 1.8 | 0.0 | - | - | 1.2 | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 0.7 | 0.7 | - | - | 0.7 | 0.7 |
| Bicycles on Road | 0 | 1 | 0 | 0 | - | 1 | 0 | 0 | 0 | 0 | - | 0 | 0 | 2 | 0 | 0 | - | 2 | 1 | 0 | 0 | 0 | - | 1 | 4 |
| % Bicycles on Road | 0.0 | 0.7 | 0.0 | - | - | 0.3 | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 1.5 | 0.0 | - | - | 1.0 | 8.3 | 0.0 | 0.0 | - | - | 0.2 | 0.2 |
| Bicycles on Crosswalk | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 2 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | 0.0 | - | - | - | - | - | - | - | - | - | - | - | 0.0 | - | - | - | - | - | 40.0 | - | - |
| Pedestrians | - | - | - | - | 5 | - | - | - | - | - | 0 | - | - | - | - | - | 2 | - | - | - | - | - | 3 | - | - |
| % Pedestrians | - | - | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - | - | - | - | 60.0 | - | - |

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Count Name: 5_46th Street & Minnehaha Avenue
Site Code: 5
Start Date: 11/08/2016
Page No: 5

Turning Movement Peak Hour Data (4:30 PM)

| Start Time | Minnehaha Avenue Southbound | | | | | | 46th Street Westbound | | | | | | Minnehaha Avenue Northbound | | | | | | 46th Street Eastbound | | | | | | Int. Total |
|-------------------------|-----------------------------|-------|-------|--------|------|------------|-----------------------|-------|-------|--------|-------|------------|-----------------------------|-------|-------|--------|------|------------|-----------------------|-------|-------|--------|-------|------------|------------|
| | Right | Thru | Left | U-Turn | Peds | App. Total | Right | Thru | Left | U-Turn | Peds | App. Total | Right | Thru | Left | U-Turn | Peds | App. Total | Right | Thru | Left | U-Turn | Peds | App. Total | |
| 4:30 PM | 25 | 72 | 36 | 0 | 8 | 133 | 38 | 113 | 17 | 0 | 3 | 168 | 13 | 56 | 5 | 0 | 1 | 74 | 7 | 137 | 33 | 0 | 2 | 177 | 552 |
| 4:45 PM | 23 | 66 | 40 | 0 | 3 | 129 | 33 | 98 | 24 | 0 | 0 | 155 | 21 | 65 | 8 | 0 | 1 | 94 | 7 | 131 | 31 | 0 | 6 | 169 | 547 |
| 5:00 PM | 30 | 53 | 34 | 0 | 5 | 117 | 35 | 106 | 30 | 0 | 6 | 171 | 13 | 45 | 6 | 0 | 1 | 64 | 4 | 137 | 38 | 0 | 4 | 179 | 531 |
| 5:15 PM | 20 | 55 | 42 | 0 | 0 | 117 | 35 | 107 | 36 | 0 | 0 | 178 | 25 | 54 | 2 | 0 | 4 | 81 | 6 | 121 | 38 | 0 | 11 | 165 | 541 |
| Total | 98 | 246 | 152 | 0 | 16 | 496 | 141 | 424 | 107 | 0 | 9 | 672 | 72 | 220 | 21 | 0 | 7 | 313 | 24 | 526 | 140 | 0 | 23 | 690 | 2171 |
| Approach % | 19.8 | 49.6 | 30.6 | 0.0 | - | - | 21.0 | 63.1 | 15.9 | 0.0 | - | - | 23.0 | 70.3 | 6.7 | 0.0 | - | - | 3.5 | 76.2 | 20.3 | 0.0 | - | - | - |
| Total % | 4.5 | 11.3 | 7.0 | 0.0 | - | 22.8 | 6.5 | 19.5 | 4.9 | 0.0 | - | 31.0 | 3.3 | 10.1 | 1.0 | 0.0 | - | 14.4 | 1.1 | 24.2 | 6.4 | 0.0 | - | 31.8 | - |
| PHF | 0.817 | 0.854 | 0.905 | 0.000 | - | 0.932 | 0.928 | 0.938 | 0.743 | 0.000 | - | 0.944 | 0.720 | 0.846 | 0.656 | 0.000 | - | 0.832 | 0.857 | 0.960 | 0.921 | 0.000 | - | 0.964 | 0.983 |
| Lights | 91 | 244 | 151 | 0 | - | 486 | 136 | 408 | 104 | 0 | - | 648 | 71 | 213 | 19 | 0 | - | 303 | 24 | 512 | 133 | 0 | - | 669 | 2106 |
| % Lights | 92.9 | 99.2 | 99.3 | - | - | 98.0 | 96.5 | 96.2 | 97.2 | - | - | 96.4 | 98.6 | 96.8 | 90.5 | - | - | 96.8 | 100.0 | 97.3 | 95.0 | - | - | 97.0 | 97.0 |
| Mediums | 6 | 0 | 0 | 0 | - | 6 | 5 | 16 | 3 | 0 | - | 24 | 0 | 0 | 0 | 0 | - | 0 | 0 | 14 | 7 | 0 | - | 21 | 51 |
| % Mediums | 6.1 | 0.0 | 0.0 | - | - | 1.2 | 3.5 | 3.8 | 2.8 | - | - | 3.6 | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 2.7 | 5.0 | - | - | 3.0 | 2.3 |
| Articulated Trucks | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Articulated Trucks | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.0 | 0.0 | 4.8 | - | - | 0.3 | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.0 |
| Bicycles on Road | 1 | 2 | 1 | 0 | - | 4 | 0 | 0 | 0 | 0 | - | 0 | 1 | 7 | 1 | 0 | - | 9 | 0 | 0 | 0 | 0 | - | 0 | 13 |
| % Bicycles on Road | 1.0 | 0.8 | 0.7 | - | - | 0.8 | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 1.4 | 3.2 | 4.8 | - | - | 2.9 | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.6 |
| Bicycles on Crosswalk | - | - | - | - | 2 | - | - | - | - | - | 0 | - | - | - | - | - | 2 | - | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | 12.5 | - | - | - | - | - | 0.0 | - | - | - | - | - | 28.6 | - | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | - | 14 | - | - | - | - | - | 9 | - | - | - | - | - | 5 | - | - | - | - | - | 23 | - | - |
| % Pedestrians | - | - | - | - | 87.5 | - | - | - | - | - | 100.0 | - | - | - | - | - | 71.4 | - | - | - | - | - | 100.0 | - | - |

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Count Name: 6_Minnehaha Avenue &
Nawadaha Boulevard
Site Code: 6
Start Date: 11/08/2016
Page No: 1

Turning Movement Data

| Start Time | Nawadaha Boulevard Eastbound | | | | Minnehaha Avenue Southbound | | | | Minnehaha Avenue Northbound | | | | Int. Total |
|-------------------------|---------------------------------|-------|------|------------|--------------------------------|-------|------|------------|--------------------------------|------|-------|------------|------------|
| | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | |
| 7:00 AM | 0 | 1 | 0 | 1 | 43 | 0 | 0 | 43 | 2 | 28 | 0 | 30 | 74 |
| 7:15 AM | 0 | 8 | 1 | 8 | 58 | 1 | 0 | 59 | 5 | 40 | 0 | 45 | 112 |
| 7:30 AM | 2 | 6 | 0 | 8 | 49 | 1 | 0 | 50 | 3 | 41 | 0 | 44 | 102 |
| 7:45 AM | 0 | 8 | 1 | 8 | 52 | 1 | 0 | 53 | 2 | 59 | 0 | 61 | 122 |
| Hourly Total | 2 | 23 | 2 | 25 | 202 | 3 | 0 | 205 | 12 | 168 | 0 | 180 | 410 |
| 8:00 AM | 2 | 5 | 1 | 7 | 60 | 0 | 0 | 60 | 3 | 58 | 0 | 61 | 128 |
| 8:15 AM | 2 | 9 | 2 | 11 | 53 | 0 | 0 | 53 | 1 | 34 | 0 | 35 | 99 |
| 8:30 AM | 1 | 5 | 1 | 6 | 61 | 2 | 0 | 63 | 3 | 33 | 0 | 36 | 105 |
| 8:45 AM | 0 | 7 | 0 | 7 | 48 | 0 | 0 | 48 | 6 | 30 | 0 | 36 | 91 |
| Hourly Total | 5 | 26 | 4 | 31 | 222 | 2 | 0 | 224 | 13 | 155 | 0 | 168 | 423 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 4 | 13 | 3 | 17 | 75 | 4 | 0 | 79 | 8 | 66 | 1 | 74 | 170 |
| 4:15 PM | 1 | 10 | 2 | 11 | 65 | 6 | 1 | 71 | 6 | 78 | 0 | 84 | 166 |
| 4:30 PM | 7 | 10 | 4 | 17 | 99 | 5 | 0 | 104 | 4 | 68 | 0 | 72 | 193 |
| 4:45 PM | 0 | 9 | 4 | 9 | 88 | 2 | 0 | 90 | 8 | 82 | 2 | 90 | 189 |
| Hourly Total | 12 | 42 | 13 | 54 | 327 | 17 | 1 | 344 | 26 | 294 | 3 | 320 | 718 |
| 5:00 PM | 1 | 15 | 3 | 16 | 72 | 7 | 1 | 79 | 7 | 63 | 0 | 70 | 165 |
| 5:15 PM | 3 | 12 | 3 | 15 | 83 | 6 | 0 | 89 | 10 | 78 | 0 | 88 | 192 |
| 5:30 PM | 1 | 13 | 6 | 14 | 61 | 1 | 1 | 62 | 9 | 65 | 0 | 74 | 150 |
| 5:45 PM | 2 | 14 | 1 | 16 | 58 | 3 | 0 | 61 | 10 | 44 | 2 | 54 | 131 |
| Hourly Total | 7 | 54 | 13 | 61 | 274 | 17 | 2 | 291 | 36 | 250 | 2 | 286 | 638 |
| Grand Total | 26 | 145 | 32 | 171 | 1025 | 39 | 3 | 1064 | 87 | 867 | 5 | 954 | 2189 |
| Approach % | 15.2 | 84.8 | - | - | 96.3 | 3.7 | - | - | 9.1 | 90.9 | - | - | - |
| Total % | 1.2 | 6.6 | - | 7.8 | 46.8 | 1.8 | - | 48.6 | 4.0 | 39.6 | - | 43.6 | - |
| Lights | 24 | 143 | - | 167 | 1005 | 39 | - | 1044 | 86 | 833 | - | 919 | 2130 |
| % Lights | 92.3 | 98.6 | - | 97.7 | 98.0 | 100.0 | - | 98.1 | 98.9 | 96.1 | - | 96.3 | 97.3 |
| Mediums | 0 | 1 | - | 1 | 17 | 0 | - | 17 | 0 | 15 | - | 15 | 33 |
| % Mediums | 0.0 | 0.7 | - | 0.6 | 1.7 | 0.0 | - | 1.6 | 0.0 | 1.7 | - | 1.6 | 1.5 |
| Articulated Trucks | 0 | 1 | - | 1 | 0 | 0 | - | 0 | 1 | 1 | - | 2 | 3 |
| % Articulated Trucks | 0.0 | 0.7 | - | 0.6 | 0.0 | 0.0 | - | 0.0 | 1.1 | 0.1 | - | 0.2 | 0.1 |
| Bicycles on Road | 2 | 0 | - | 2 | 3 | 0 | - | 3 | 0 | 18 | - | 18 | 23 |
| % Bicycles on Road | 7.7 | 0.0 | - | 1.2 | 0.3 | 0.0 | - | 0.3 | 0.0 | 2.1 | - | 1.9 | 1.1 |
| Bicycles on Crosswalk | - | - | 8 | - | - | - | 1 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | 25.0 | - | - | - | 33.3 | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | 24 | - | - | - | 2 | - | - | - | 5 | - | - |
| % Pedestrians | - | - | 75.0 | - | - | - | 66.7 | - | - | - | 100.0 | - | - |

Count Name: 6_Minnehaha Avenue &
Nawadaha Boulevard
Site Code: 6
Start Date: 11/08/2016
Page No: 3

Turning Movement Peak Hour Data (7:15 AM)

[illegible]

Turning Movement Peak Hour Data (4:30 PM)

| Start Time | Nawadaha Boulevard Eastbound | | | | Minnehaha Avenue Southbound | | | | Minnehaha Avenue Northbound | | | | Int. Total |
|-------------------------|---------------------------------|-------|------|------------|--------------------------------|-------|-------|------------|--------------------------------|-------|-------|------------|------------|
| | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | |
| 4:30 PM | 7 | 10 | 4 | 17 | 99 | 5 | 0 | 104 | 4 | 68 | 0 | 72 | 193 |
| 4:45 PM | 0 | 9 | 4 | 9 | 88 | 2 | 0 | 90 | 8 | 82 | 2 | 90 | 189 |
| 5:00 PM | 1 | 15 | 3 | 16 | 72 | 7 | 1 | 79 | 7 | 63 | 0 | 70 | 165 |
| 5:15 PM | 3 | 12 | 3 | 15 | 83 | 6 | 0 | 89 | 10 | 78 | 0 | 88 | 192 |
| Total | 11 | 46 | 14 | 57 | 342 | 20 | 1 | 362 | 29 | 291 | 2 | 320 | 739 |
| Approach % | 19.3 | 80.7 | - | - | 94.5 | 5.5 | - | - | 9.1 | 90.9 | - | - | - |
| Total % | 1.5 | 6.2 | - | 7.7 | 46.3 | 2.7 | - | 49.0 | 3.9 | 39.4 | - | 43.3 | - |
| PHF | 0.393 | 0.767 | - | 0.838 | 0.864 | 0.714 | - | 0.870 | 0.725 | 0.887 | - | 0.889 | 0.957 |
| Lights | 9 | 46 | - | 55 | 337 | 20 | - | 357 | 29 | 282 | - | 311 | 723 |
| % Lights | 81.8 | 100.0 | - | 96.5 | 98.5 | 100.0 | - | 98.6 | 100.0 | 96.9 | - | 97.2 | 97.8 |
| Mediums | 0 | 0 | - | 0 | 3 | 0 | - | 3 | 0 | 0 | - | 0 | 3 |
| % Mediums | 0.0 | 0.0 | - | 0.0 | 0.9 | 0.0 | - | 0.8 | 0.0 | 0.0 | - | 0.0 | 0.4 |
| Articulated Trucks | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 |
| % Articulated Trucks | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Road | 2 | 0 | - | 2 | 2 | 0 | - | 2 | 0 | 9 | - | 9 | 13 |
| % Bicycles on Road | 18.2 | 0.0 | - | 3.5 | 0.6 | 0.0 | - | 0.6 | 0.0 | 3.1 | - | 2.8 | 1.8 |
| Bicycles on Crosswalk | - | - | 2 | - | - | - | 0 | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | 14.3 | - | - | - | 0.0 | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | 12 | - | - | - | 1 | - | - | - | 2 | - | - |
| % Pedestrians | - | - | 85.7 | - | - | - | 100.0 | - | - | - | 100.0 | - | - |

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Count Name: 7_Hiawatha Avenue & Burger King
 Driveway
 Site Code: 7
 Start Date: 11/08/2016
 Page No: 1

Direction (Westbound)

| Start Time | Lights | Mediums | Articulated Trucks | Total |
|------------|---------|---------|--------------------|---------|
| 7:00 AM | 1 | 0 | 0 | 1 |
| 7:15 AM | 3 | 0 | 0 | 3 |
| 7:30 AM | 2 | 0 | 0 | 2 |
| 7:45 AM | 8 | 0 | 0 | 8 |
| 8:00 AM | 3 | 1 | 0 | 4 |
| 8:15 AM | 8 | 0 | 0 | 8 |
| 8:30 AM | 2 | 1 | 0 | 3 |
| 8:45 AM | 8 | 1 | 0 | 9 |
| 4:00 PM | 12 | 0 | 0 | 12 |
| 4:15 PM | 8 | 0 | 0 | 8 |
| 4:30 PM | 9 | 0 | 0 | 9 |
| 4:45 PM | 10 | 1 | 0 | 11 |
| 5:00 PM | 11 | 0 | 0 | 11 |
| 5:15 PM | 11 | 0 | 0 | 11 |
| 5:30 PM | 8 | 0 | 0 | 8 |
| 5:45 PM | 5 | 0 | 0 | 5 |
| Total | 109 | 4 | 0 | 113 |
| Total % | 96.5 | 3.5 | 0.0 | 100.0 |
| AM Times | 7:45 AM | 8:00 AM | 7:00 AM | 7:45 AM |
| AM Peaks | 21 | 3 | 0 | 23 |
| PM Times | 4:30 PM | 4:00 PM | 4:00 PM | 4:30 PM |
| PM Peaks | 41 | 1 | 0 | 42 |

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Count Name: 7_Hiawatha Avenue & Burger King
 Driveway
 Site Code: 7
 Start Date: 11/08/2016
 Page No: 2

Direction (Eastbound)

| Start Time | Lights | Mediums | Articulated Trucks | Total |
|------------|---------|---------|--------------------|---------|
| 7:00 AM | 5 | 1 | 0 | 6 |
| 7:15 AM | 7 | 0 | 0 | 7 |
| 7:30 AM | 3 | 1 | 0 | 4 |
| 7:45 AM | 11 | 0 | 0 | 11 |
| 8:00 AM | 5 | 0 | 0 | 5 |
| 8:15 AM | 9 | 0 | 0 | 9 |
| 8:30 AM | 8 | 2 | 0 | 10 |
| 8:45 AM | 8 | 0 | 0 | 8 |
| 4:00 PM | 12 | 0 | 0 | 12 |
| 4:15 PM | 4 | 1 | 0 | 5 |
| 4:30 PM | 14 | 0 | 0 | 14 |
| 4:45 PM | 14 | 0 | 0 | 14 |
| 5:00 PM | 12 | 0 | 0 | 12 |
| 5:15 PM | 7 | 0 | 0 | 7 |
| 5:30 PM | 9 | 0 | 0 | 9 |
| 5:45 PM | 10 | 0 | 0 | 10 |
| Total | 138 | 5 | 0 | 143 |
| Total % | 96.5 | 3.5 | 0.0 | 100.0 |
| AM Times | 7:45 AM | 8:00 AM | 7:00 AM | 7:45 AM |
| AM Peaks | 33 | 2 | 0 | 35 |
| PM Times | 4:30 PM | 4:00 PM | 4:00 PM | 4:30 PM |
| PM Peaks | 47 | 1 | 0 | 47 |

Appendix D: SimTraffic Reports



1: Hiawatha Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------|------|------|------|------|------|------|------|------|-----|------|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 2.3 | 0.2 | 2.3 |
| Total Del/Veh (s) | 31.0 | 39.7 | 41.3 | 39.0 | 51.1 | 12.2 | 51.8 | 42.7 | 5.2 | 47.7 | 23.2 | 3.8 |

1: Hiawatha Ave & E 46th Street Performance by movement

| Movement | All |
|--------------------|------|
| Denied Del/Veh (s) | 0.2 |
| Total Del/Veh (s) | 32.0 |

2: Holiday Driveway & E 46th Street Performance by movement

| Movement | EBT | EBR | WBL | WBT | NBL | NBR | All |
|--------------------|-----|-----|------|-----|-------|------|------|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 43.3 | 46.4 | 3.6 |
| Total Del/Veh (s) | 5.8 | 5.0 | 18.7 | 5.1 | 102.7 | 60.0 | 11.2 |

3: Snelling Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBR | SBL | SBR | All |
|--------------------|------|-----|-----|------|-----|-----|------|-----|------|-----|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 3.7 | 0.1 | 0.1 | 0.1 |
| Total Del/Veh (s) | 11.8 | 5.6 | 3.2 | 12.3 | 8.4 | 1.8 | 47.9 | 7.0 | 23.9 | 8.5 | 8.8 |

4: Alleyway & E 46th Street Performance by movement

| Movement | EBT | EBR | WBT | NBR | All |
|--------------------|-----|------|-----|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Del/Veh (s) | 8.0 | 16.2 | 1.9 | 52.9 | 5.7 |

5: Minnehaha Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 2.3 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 3.6 | 0.5 | 0.4 |
| Total Del/Veh (s) | 33.7 | 28.5 | 22.2 | 35.5 | 44.4 | 23.6 | 26.0 | 24.6 | 17.6 | 21.1 | 22.2 | 15.6 |

5: Minnehaha Ave & E 46th Street Performance by movement

| Movement | All |
|--------------------|------|
| Denied Del/Veh (s) | 0.4 |
| Total Del/Veh (s) | 30.4 |

6: Minnehaha Ave & Nawadaha Ave Performance by movement

| Movement | EBL | EBR | NBL | NBT | SBT | SBR | All |
|--------------------|-----|-----|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.1 |
| Total Del/Veh (s) | 7.9 | 3.2 | 2.6 | 0.2 | 1.8 | 2.2 | 1.4 |

7: Hiawatha Ave & Burger King Drive Performance by movement

| Movement | WBR | NBT | NBR | SBT | All |
|--------------------|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.4 | 2.3 | 0.0 | 0.3 |
| Total Del/Veh (s) | 9.5 | 1.2 | 0.6 | 2.8 | 2.0 |

Total Network Performance

| | |
|--------------------|------|
| Denied Del/Veh (s) | 1.7 |
| Total Del/Veh (s) | 49.8 |

Queuing and Blocking Report
2020 Existing Conditions - AM Peak Hour

06/22/2020

Intersection: 1: Hiawatha Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Directions Served | L | T | TR | L | LT | R | L | T | T | R | L | T |
| Maximum Queue (ft) | 102 | 118 | 110 | 145 | 291 | 157 | 42 | 457 | 449 | 232 | 196 | 275 |
| Average Queue (ft) | 35 | 53 | 45 | 106 | 184 | 34 | 8 | 315 | 295 | 13 | 98 | 156 |
| 95th Queue (ft) | 79 | 97 | 94 | 177 | 319 | 95 | 26 | 438 | 424 | 131 | 179 | 243 |
| Link Distance (ft) | | 341 | 341 | | 193 | 193 | | 517 | 517 | | | 1666 |
| Upstream Blk Time (%) | | | | | 15 | 0 | | 0 | 0 | | | |
| Queuing Penalty (veh) | | | | | 41 | 0 | | 1 | 1 | | | |
| Storage Bay Dist (ft) | 205 | | | 95 | | | 355 | | | 375 | 430 | |
| Storage Blk Time (%) | | | | 11 | 37 | | | 5 | 2 | | | |
| Queuing Penalty (veh) | | | | 32 | 57 | | | 1 | 6 | | | |

Intersection: 1: Hiawatha Ave & E 46th Street

| Movement | SB |
|-----------------------|------|
| Directions Served | T |
| Maximum Queue (ft) | 271 |
| Average Queue (ft) | 146 |
| 95th Queue (ft) | 233 |
| Link Distance (ft) | 1666 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |

Intersection: 2: Holiday Driveway & E 46th Street

| Movement | EB | EB | WB | WB | WB | NB |
|-----------------------|-----|-----|----|-----|-----|-----|
| Directions Served | T | TR | L | T | T | LR |
| Maximum Queue (ft) | 47 | 60 | 55 | 265 | 52 | 186 |
| Average Queue (ft) | 3 | 4 | 30 | 62 | 2 | 90 |
| 95th Queue (ft) | 25 | 29 | 55 | 204 | 38 | 188 |
| Link Distance (ft) | 193 | 193 | | 180 | 180 | 166 |
| Upstream Blk Time (%) | | | | 3 | 0 | 16 |
| Queuing Penalty (veh) | | | | 10 | 0 | 0 |
| Storage Bay Dist (ft) | | | 20 | | | |
| Storage Blk Time (%) | | | 16 | 6 | | |
| Queuing Penalty (veh) | | | 41 | 3 | | |

Queuing and Blocking Report
2020 Existing Conditions - AM Peak Hour

06/22/2020

Intersection: 3: Snelling Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | SB |
|-----------------------|-----|-----|-----|-----|-----|-----|------|----|-----|
| Directions Served | L | T | TR | L | T | TR | LT | R | LTR |
| Maximum Queue (ft) | 80 | 172 | 174 | 150 | 314 | 176 | 104 | 75 | 71 |
| Average Queue (ft) | 19 | 51 | 49 | 21 | 90 | 18 | 45 | 19 | 23 |
| 95th Queue (ft) | 57 | 129 | 121 | 98 | 261 | 89 | 89 | 64 | 55 |
| Link Distance (ft) | | 180 | 180 | | 238 | 238 | 1051 | | 692 |
| Upstream Blk Time (%) | | 0 | 1 | | 2 | 0 | | | |
| Queuing Penalty (veh) | | 2 | 2 | | 6 | 0 | | | |
| Storage Bay Dist (ft) | 135 | | | 140 | | | | 50 | |
| Storage Blk Time (%) | | 1 | | 0 | 5 | | 19 | 0 | |
| Queuing Penalty (veh) | | 0 | | 0 | 1 | | 4 | 0 | |

Intersection: 4: Alleyway & E 46th Street

| Movement | EB | EB | EB | WB | NB |
|-----------------------|----|-----|-----|-----|-----|
| Directions Served | T | T | TR | T | R |
| Maximum Queue (ft) | 89 | 211 | 220 | 101 | 61 |
| Average Queue (ft) | 21 | 40 | 54 | 8 | 14 |
| 95th Queue (ft) | 74 | 156 | 166 | 53 | 50 |
| Link Distance (ft) | | 238 | 238 | 44 | 972 |
| Upstream Blk Time (%) | | 2 | 2 | 1 | |
| Queuing Penalty (veh) | | 5 | 5 | 4 | |
| Storage Bay Dist (ft) | 50 | | | | |
| Storage Blk Time (%) | 6 | 5 | | | |
| Queuing Penalty (veh) | 11 | 10 | | | |

Intersection: 5: Minnehaha Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|------|------|----|-----|-----|------|
| Directions Served | L | T | TR | L | T | TR | L | TR | L | TR |
| Maximum Queue (ft) | 134 | 127 | 146 | 164 | 420 | 397 | 75 | 217 | 144 | 311 |
| Average Queue (ft) | 81 | 86 | 104 | 53 | 188 | 129 | 12 | 92 | 39 | 109 |
| 95th Queue (ft) | 139 | 144 | 150 | 146 | 335 | 287 | 50 | 178 | 97 | 230 |
| Link Distance (ft) | 44 | 44 | 44 | | 1462 | 1462 | | 896 | | 1018 |
| Upstream Blk Time (%) | 30 | 27 | 40 | | | | | | | |
| Queuing Penalty (veh) | 62 | 55 | 82 | | | | | | | |
| Storage Bay Dist (ft) | | | | 120 | | | 40 | | 170 | |
| Storage Blk Time (%) | | | | 0 | 26 | | 2 | 30 | | 4 |
| Queuing Penalty (veh) | | | | 0 | 21 | | 3 | 4 | | 3 |

Queuing and Blocking Report
2020 Existing Conditions - AM Peak Hour

06/22/2020

Intersection: 6: Minnehaha Ave & Nawadaha Ave

| Movement | EB | NB |
|-----------------------|-----|-----|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 58 | 29 |
| Average Queue (ft) | 25 | 2 |
| 95th Queue (ft) | 52 | 14 |
| Link Distance (ft) | 423 | 443 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

Intersection: 7: Hiawatha Ave & Burger King Drive

| Movement | WB |
|-----------------------|-----|
| Directions Served | R |
| Maximum Queue (ft) | 48 |
| Average Queue (ft) | 18 |
| 95th Queue (ft) | 41 |
| Link Distance (ft) | 271 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

Network Summary

Network wide Queuing Penalty: 474

1: Hiawatha Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------|------|------|------|------|------|------|------|------|-----|------|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 0.2 | 2.2 |
| Total Del/Veh (s) | 30.6 | 40.6 | 40.4 | 46.7 | 59.7 | 16.6 | 56.3 | 51.7 | 6.1 | 56.7 | 26.4 | 3.5 |

1: Hiawatha Ave & E 46th Street Performance by movement

| Movement | All |
|--------------------|------|
| Denied Del/Veh (s) | 0.2 |
| Total Del/Veh (s) | 36.9 |

2: Holiday Driveway & E 46th Street Performance by movement

| Movement | EBT | EBR | WBL | WBT | NBL | NBR | All |
|--------------------|-----|-----|------|-----|-------|-------|------|
| Denied Del/Veh (s) | 0.0 | 0.1 | 0.0 | 0.0 | 629.3 | 648.4 | 55.0 |
| Total Del/Veh (s) | 6.4 | 5.7 | 24.2 | 5.8 | 274.4 | 190.2 | 21.4 |

3: Snelling Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBR | SBL | SBR | All |
|--------------------|------|-----|-----|------|-----|-----|------|------|------|-----|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 3.4 | 0.1 | 0.1 | 0.1 |
| Total Del/Veh (s) | 11.9 | 6.4 | 4.8 | 10.4 | 9.0 | 4.6 | 44.0 | 11.0 | 54.3 | 9.8 | 9.5 |

4: Alleyway & E 46th Street Performance by movement

| Movement | EBT | EBR | WBT | NBR | All |
|--------------------|-----|------|-----|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Del/Veh (s) | 8.8 | 14.7 | 1.5 | 39.6 | 5.6 |

5: Minnehaha Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 2.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 3.3 | 0.7 | 0.7 |
| Total Del/Veh (s) | 32.1 | 26.9 | 20.6 | 35.8 | 41.6 | 28.4 | 38.2 | 38.6 | 29.5 | 28.8 | 30.9 | 23.4 |

5: Minnehaha Ave & E 46th Street Performance by movement

| Movement | All |
|--------------------|------|
| Denied Del/Veh (s) | 0.5 |
| Total Del/Veh (s) | 32.4 |

6: Minnehaha Ave & Nawadaha Ave Performance by movement

| Movement | EBL | EBR | NBL | NBT | SBT | SBR | All |
|--------------------|------|-----|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.1 |
| Total Del/Veh (s) | 10.7 | 4.8 | 3.7 | 0.6 | 2.6 | 2.1 | 2.1 |

7: Hiawatha Ave & Burger King Drive Performance by movement

| Movement | WBR | NBT | NBR | SBT | All |
|--------------------|------|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.4 | 2.3 | 0.0 | 0.3 |
| Total Del/Veh (s) | 15.3 | 1.6 | 0.8 | 3.1 | 2.5 |

Total Network Performance

| | |
|--------------------|------|
| Denied Del/Veh (s) | 20.2 |
| Total Del/Veh (s) | 57.7 |

Queuing and Blocking Report
2020 Existing Conditions - PM Peak Hour

06/22/2020

Intersection: 1: Hiawatha Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Directions Served | L | T | TR | L | LT | R | L | T | T | R | L | T |
| Maximum Queue (ft) | 89 | 158 | 138 | 145 | 283 | 181 | 151 | 471 | 481 | 286 | 338 | 297 |
| Average Queue (ft) | 37 | 69 | 57 | 121 | 217 | 65 | 34 | 339 | 319 | 29 | 170 | 176 |
| 95th Queue (ft) | 76 | 131 | 122 | 183 | 329 | 139 | 161 | 468 | 445 | 181 | 276 | 262 |
| Link Distance (ft) | | 341 | 341 | | 193 | 193 | | 517 | 517 | | | 1666 |
| Upstream Blk Time (%) | | | | | 23 | 0 | | 0 | 0 | | | |
| Queuing Penalty (veh) | | | | | 80 | 1 | | 3 | 1 | | | |
| Storage Bay Dist (ft) | 205 | | | 95 | | | 355 | | | 375 | 430 | |
| Storage Blk Time (%) | | | | 8 | 48 | | | 9 | 4 | | | |
| Queuing Penalty (veh) | | | | 27 | 66 | | | 4 | 19 | | | |

Intersection: 1: Hiawatha Ave & E 46th Street

| Movement | SB |
|-----------------------|------|
| Directions Served | T |
| Maximum Queue (ft) | 292 |
| Average Queue (ft) | 173 |
| 95th Queue (ft) | 262 |
| Link Distance (ft) | 1666 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |

Intersection: 2: Holiday Driveway & E 46th Street

| Movement | EB | EB | WB | WB | WB | NB |
|-----------------------|-----|-----|----|-----|-----|-----|
| Directions Served | T | TR | L | T | T | LR |
| Maximum Queue (ft) | 69 | 74 | 56 | 251 | 33 | 215 |
| Average Queue (ft) | 5 | 8 | 31 | 85 | 1 | 180 |
| 95th Queue (ft) | 30 | 38 | 55 | 231 | 24 | 202 |
| Link Distance (ft) | 193 | 193 | | 180 | 180 | 166 |
| Upstream Blk Time (%) | | | | 5 | 0 | 99 |
| Queuing Penalty (veh) | | | | 17 | 0 | 0 |
| Storage Bay Dist (ft) | | | 20 | | | |
| Storage Blk Time (%) | | | 22 | 9 | | |
| Queuing Penalty (veh) | | | 69 | 5 | | |

Queuing and Blocking Report
2020 Existing Conditions - PM Peak Hour

06/22/2020

Intersection: 3: Snelling Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | SB |
|-----------------------|-----|-----|-----|-----|-----|-----|------|----|-----|
| Directions Served | L | T | TR | L | T | TR | LT | R | LTR |
| Maximum Queue (ft) | 127 | 182 | 178 | 108 | 305 | 198 | 155 | 75 | 69 |
| Average Queue (ft) | 28 | 69 | 76 | 18 | 95 | 40 | 59 | 28 | 19 |
| 95th Queue (ft) | 73 | 149 | 156 | 60 | 251 | 130 | 127 | 74 | 50 |
| Link Distance (ft) | | 180 | 180 | | 238 | 238 | 1051 | | 692 |
| Upstream Blk Time (%) | | 0 | 0 | | 2 | 0 | | | |
| Queuing Penalty (veh) | | 1 | 1 | | 6 | 0 | | | |
| Storage Bay Dist (ft) | 135 | | | 140 | | | | 50 | |
| Storage Blk Time (%) | 0 | 1 | | | 6 | | 21 | 1 | |
| Queuing Penalty (veh) | 0 | 1 | | | 3 | | 6 | 1 | |

Intersection: 4: Alleyway & E 46th Street

| Movement | EB | EB | EB | WB | NB |
|-----------------------|----|-----|-----|----|-----|
| Directions Served | T | T | TR | T | R |
| Maximum Queue (ft) | 89 | 266 | 270 | 65 | 35 |
| Average Queue (ft) | 18 | 62 | 71 | 4 | 5 |
| 95th Queue (ft) | 70 | 203 | 207 | 35 | 23 |
| Link Distance (ft) | | 238 | 238 | 44 | 972 |
| Upstream Blk Time (%) | | 1 | 1 | 1 | |
| Queuing Penalty (veh) | | 4 | 4 | 2 | |
| Storage Bay Dist (ft) | 50 | | | | |
| Storage Blk Time (%) | 3 | 8 | | | |
| Queuing Penalty (veh) | 7 | 21 | | | |

Intersection: 5: Minnehaha Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|------|------|-----|-----|-----|------|
| Directions Served | L | T | TR | L | T | TR | L | TR | L | TR |
| Maximum Queue (ft) | 130 | 136 | 133 | 185 | 450 | 442 | 100 | 370 | 220 | 454 |
| Average Queue (ft) | 76 | 94 | 104 | 74 | 188 | 165 | 25 | 181 | 103 | 202 |
| 95th Queue (ft) | 131 | 148 | 142 | 171 | 357 | 341 | 81 | 341 | 214 | 367 |
| Link Distance (ft) | 44 | 44 | 44 | | 1462 | 1462 | | 896 | | 1018 |
| Upstream Blk Time (%) | 28 | 34 | 44 | | | | | | | |
| Queuing Penalty (veh) | 71 | 88 | 113 | | | | | | | |
| Storage Bay Dist (ft) | | | | 120 | | | 40 | | 170 | |
| Storage Blk Time (%) | | | | 2 | 26 | | 3 | 47 | 1 | 13 |
| Queuing Penalty (veh) | | | | 4 | 29 | | 11 | 12 | 3 | 21 |

Queuing and Blocking Report
2020 Existing Conditions - PM Peak Hour

06/22/2020

Intersection: 6: Minnehaha Ave & Nawadaha Ave

| Movement | EB | NB |
|-----------------------|-----|-----|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 76 | 89 |
| Average Queue (ft) | 31 | 11 |
| 95th Queue (ft) | 59 | 51 |
| Link Distance (ft) | 423 | 443 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

Intersection: 7: Hiawatha Ave & Burger King Drive

| Movement | WB |
|-----------------------|-----|
| Directions Served | R |
| Maximum Queue (ft) | 74 |
| Average Queue (ft) | 28 |
| 95th Queue (ft) | 57 |
| Link Distance (ft) | 271 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

Network Summary

Network wide Queuing Penalty: 700

1: Hiawatha Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------|------|------|------|------|------|------|------|------|-----|------|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.3 | 0.2 | 2.3 |
| Total Del/Veh (s) | 30.6 | 38.8 | 41.3 | 38.4 | 50.5 | 12.6 | 50.9 | 43.9 | 5.3 | 46.7 | 25.2 | 3.8 |

1: Hiawatha Ave & E 46th Street Performance by movement

| Movement | All |
|--------------------|------|
| Denied Del/Veh (s) | 0.2 |
| Total Del/Veh (s) | 32.5 |

2: Holiday Driveway & E 46th Street Performance by movement

| Movement | EBT | EBR | WBL | WBT | NBL | NBR | All |
|--------------------|-----|-----|------|-----|------|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 1.0 | 0.1 |
| Total Del/Veh (s) | 5.7 | 5.2 | 14.3 | 4.5 | 82.0 | 39.5 | 9.0 |

3: Snelling Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBR | SBL | SBR | All |
|--------------------|-----|-----|-----|-----|-----|-----|------|-----|------|-----|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 3.7 | 0.1 | 0.1 | 0.1 |
| Total Del/Veh (s) | 9.1 | 5.2 | 3.7 | 9.7 | 6.4 | 0.9 | 47.5 | 9.5 | 40.9 | 9.2 | 8.0 |

4: Alleyway & E 46th Street Performance by movement

| Movement | EBT | EBR | WBT | NBR | All |
|--------------------|-----|-----|-----|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Del/Veh (s) | 9.6 | 7.5 | 1.6 | 60.2 | 6.3 |

5: Minnehaha Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.5 | 2.3 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 3.7 | 0.4 | 0.4 |
| Total Del/Veh (s) | 33.7 | 29.8 | 23.0 | 44.4 | 50.9 | 29.0 | 19.1 | 23.1 | 13.2 | 20.2 | 21.2 | 12.7 |

5: Minnehaha Ave & E 46th Street Performance by movement

| Movement | All |
|--------------------|------|
| Denied Del/Veh (s) | 0.4 |
| Total Del/Veh (s) | 32.7 |

6: Minnehaha Ave & Nawadaha Ave Performance by movement

| Movement | EBL | EBR | NBL | NBT | SBT | SBR | All |
|--------------------|-----|-----|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.1 |
| Total Del/Veh (s) | 6.3 | 3.2 | 2.9 | 0.2 | 1.8 | 1.4 | 1.4 |

7: Hiawatha Ave & Burger King Drive Performance by movement

| Movement | WBR | NBT | NBR | SBT | All |
|--------------------|------|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.4 | 2.4 | 0.0 | 0.3 |
| Total Del/Veh (s) | 13.5 | 1.3 | 0.7 | 3.0 | 2.2 |

Total Network Performance

| | |
|--------------------|------|
| Denied Del/Veh (s) | 0.6 |
| Total Del/Veh (s) | 50.5 |

Queuing and Blocking Report
2022 No Build Conditions - AM Peak Hour

06/22/2020

Intersection: 1: Hiawatha Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Directions Served | L | T | TR | L | LT | R | L | T | T | R | L | T |
| Maximum Queue (ft) | 94 | 127 | 128 | 145 | 291 | 114 | 63 | 508 | 487 | 284 | 208 | 285 |
| Average Queue (ft) | 34 | 56 | 47 | 114 | 179 | 35 | 10 | 319 | 297 | 15 | 84 | 170 |
| 95th Queue (ft) | 74 | 112 | 104 | 179 | 304 | 87 | 35 | 470 | 452 | 138 | 166 | 255 |
| Link Distance (ft) | | 341 | 341 | | 193 | 193 | | 517 | 517 | | | 1666 |
| Upstream Blk Time (%) | | | | | 14 | 0 | | 0 | 0 | | | |
| Queuing Penalty (veh) | | | | | 38 | 0 | | 3 | 2 | | | |
| Storage Bay Dist (ft) | 205 | | | 95 | | | 355 | | | 375 | 430 | |
| Storage Blk Time (%) | | | | 10 | 37 | | | 7 | 2 | | | |
| Queuing Penalty (veh) | | | | 28 | 57 | | | 1 | 10 | | | |

Intersection: 1: Hiawatha Ave & E 46th Street

| Movement | SB |
|-----------------------|------|
| Directions Served | T |
| Maximum Queue (ft) | 271 |
| Average Queue (ft) | 161 |
| 95th Queue (ft) | 248 |
| Link Distance (ft) | 1666 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |

Intersection: 2: Holiday Driveway & E 46th Street

| Movement | EB | EB | WB | WB | WB | NB |
|-----------------------|-----|-----|----|-----|-----|-----|
| Directions Served | T | TR | L | T | T | LR |
| Maximum Queue (ft) | 55 | 50 | 60 | 276 | 57 | 173 |
| Average Queue (ft) | 3 | 6 | 28 | 54 | 2 | 74 |
| 95th Queue (ft) | 22 | 28 | 58 | 189 | 33 | 155 |
| Link Distance (ft) | 193 | 193 | | 180 | 180 | 166 |
| Upstream Blk Time (%) | | | | 3 | 0 | 2 |
| Queuing Penalty (veh) | | | | 8 | 1 | 0 |
| Storage Bay Dist (ft) | | | 20 | | | |
| Storage Blk Time (%) | | | 12 | 5 | | |
| Queuing Penalty (veh) | | | 33 | 3 | | |

Queuing and Blocking Report
2022 No Build Conditions - AM Peak Hour

06/22/2020

Intersection: 3: Snelling Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | SB |
|-----------------------|-----|-----|-----|-----|-----|-----|------|----|-----|
| Directions Served | L | T | TR | L | T | TR | LT | R | LTR |
| Maximum Queue (ft) | 92 | 151 | 152 | 112 | 292 | 128 | 132 | 74 | 90 |
| Average Queue (ft) | 17 | 50 | 53 | 15 | 72 | 15 | 52 | 15 | 24 |
| 95th Queue (ft) | 57 | 117 | 117 | 71 | 216 | 73 | 106 | 55 | 61 |
| Link Distance (ft) | | 180 | 180 | | 238 | 238 | 1051 | | 692 |
| Upstream Blk Time (%) | | 0 | 0 | | 1 | 0 | | | |
| Queuing Penalty (veh) | | 0 | 0 | | 3 | 0 | | | |
| Storage Bay Dist (ft) | 135 | | | 140 | | | | 50 | |
| Storage Blk Time (%) | | 0 | | | 3 | | 19 | 0 | |
| Queuing Penalty (veh) | | 0 | | | 1 | | 4 | 0 | |

Intersection: 4: Alleyway & E 46th Street

| Movement | EB | EB | EB | WB | NB |
|-----------------------|----|-----|-----|----|-----|
| Directions Served | T | T | TR | T | R |
| Maximum Queue (ft) | 90 | 247 | 250 | 45 | 52 |
| Average Queue (ft) | 17 | 49 | 56 | 3 | 13 |
| 95th Queue (ft) | 67 | 187 | 189 | 24 | 41 |
| Link Distance (ft) | | 238 | 238 | 44 | 972 |
| Upstream Blk Time (%) | | 2 | 2 | 0 | |
| Queuing Penalty (veh) | | 7 | 6 | 1 | |
| Storage Bay Dist (ft) | 50 | | | | |
| Storage Blk Time (%) | 4 | 7 | | | |
| Queuing Penalty (veh) | 8 | 13 | | | |

Intersection: 5: Minnehaha Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|------|------|----|-----|-----|------|
| Directions Served | L | T | TR | L | T | TR | L | TR | L | TR |
| Maximum Queue (ft) | 137 | 149 | 143 | 185 | 526 | 512 | 66 | 197 | 125 | 246 |
| Average Queue (ft) | 74 | 84 | 103 | 57 | 208 | 161 | 8 | 83 | 36 | 96 |
| 95th Queue (ft) | 134 | 146 | 145 | 156 | 432 | 395 | 35 | 169 | 87 | 192 |
| Link Distance (ft) | 44 | 44 | 44 | | 1462 | 1462 | | 896 | | 1018 |
| Upstream Blk Time (%) | 29 | 28 | 41 | | | | | | | |
| Queuing Penalty (veh) | 60 | 57 | 86 | | | | | | | |
| Storage Bay Dist (ft) | | | | 120 | | | 40 | | 170 | |
| Storage Blk Time (%) | | | | 0 | 27 | | 1 | 25 | 0 | 2 |
| Queuing Penalty (veh) | | | | 0 | 22 | | 2 | 4 | 0 | 1 |

Queuing and Blocking Report
2022 No Build Conditions - AM Peak Hour

06/22/2020

Intersection: 6: Minnehaha Ave & Nawadaha Ave

| Movement | EB | NB |
|-----------------------|-----|-----|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 57 | 36 |
| Average Queue (ft) | 24 | 3 |
| 95th Queue (ft) | 51 | 20 |
| Link Distance (ft) | 423 | 443 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

Intersection: 7: Hiawatha Ave & Burger King Drive

| Movement | WB | NB | NB |
|-----------------------|-----|-----|-----|
| Directions Served | R | T | T |
| Maximum Queue (ft) | 62 | 4 | 13 |
| Average Queue (ft) | 20 | 0 | 0 |
| 95th Queue (ft) | 45 | 3 | 10 |
| Link Distance (ft) | 271 | 781 | 781 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

Network Summary

Network wide Queuing Penalty: 458

1: Hiawatha Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------|------|------|------|------|------|------|------|------|-----|------|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 0.3 | 2.0 |
| Total Del/Veh (s) | 32.5 | 42.8 | 42.6 | 45.2 | 54.4 | 18.0 | 55.3 | 50.4 | 6.6 | 54.3 | 26.5 | 3.9 |

1: Hiawatha Ave & E 46th Street Performance by movement

| Movement | All |
|--------------------|------|
| Denied Del/Veh (s) | 0.2 |
| Total Del/Veh (s) | 36.0 |

2: Holiday Driveway & E 46th Street Performance by movement

| Movement | EBT | EBR | WBL | WBT | NBL | NBR | All |
|--------------------|-----|-----|------|-----|-------|-------|------|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 622.9 | 598.9 | 48.4 |
| Total Del/Veh (s) | 6.7 | 6.7 | 28.1 | 5.0 | 259.9 | 176.6 | 19.5 |

3: Snelling Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBR | SBL | SBR | All |
|--------------------|------|-----|-----|-----|-----|-----|------|------|------|-----|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 3.7 | 0.1 | 0.1 | 0.1 |
| Total Del/Veh (s) | 10.2 | 6.5 | 4.9 | 9.9 | 7.5 | 2.9 | 45.5 | 10.8 | 35.9 | 8.1 | 9.0 |

4: Alleyway & E 46th Street Performance by movement

| Movement | EBT | EBR | WBT | NBR | All |
|--------------------|-----|-----|-----|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Del/Veh (s) | 8.1 | 4.3 | 1.5 | 35.9 | 5.2 |

5: Minnehaha Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 2.1 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 3.4 | 0.8 | 0.8 |
| Total Del/Veh (s) | 29.4 | 25.6 | 20.9 | 33.0 | 38.4 | 27.0 | 35.8 | 36.5 | 26.8 | 30.4 | 30.2 | 22.9 |

5: Minnehaha Ave & E 46th Street Performance by movement

| Movement | All |
|--------------------|------|
| Denied Del/Veh (s) | 0.5 |
| Total Del/Veh (s) | 30.7 |

6: Minnehaha Ave & Nawadaha Ave Performance by movement

| Movement | EBL | EBR | NBL | NBT | SBT | SBR | All |
|--------------------|-----|-----|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.1 | 0.2 | 0.3 | 0.0 | 0.0 | 0.1 |
| Total Del/Veh (s) | 9.7 | 5.1 | 3.8 | 0.6 | 2.6 | 2.5 | 2.2 |

7: Hiawatha Ave & Burger King Drive Performance by movement

| Movement | WBR | NBT | NBR | SBT | All |
|--------------------|------|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.5 | 2.2 | 0.0 | 0.3 |
| Total Del/Veh (s) | 19.0 | 1.7 | 0.9 | 3.2 | 2.7 |

Total Network Performance

| | |
|--------------------|------|
| Denied Del/Veh (s) | 17.7 |
| Total Del/Veh (s) | 55.7 |

Queuing and Blocking Report
2022 No Build Conditions - PM Peak Hour

06/22/2020

Intersection: 1: Hiawatha Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Directions Served | L | T | TR | L | LT | R | L | T | T | R | L | T |
| Maximum Queue (ft) | 103 | 143 | 143 | 145 | 285 | 191 | 156 | 539 | 514 | 378 | 295 | 281 |
| Average Queue (ft) | 32 | 67 | 60 | 121 | 204 | 71 | 27 | 341 | 323 | 54 | 172 | 180 |
| 95th Queue (ft) | 74 | 120 | 124 | 184 | 311 | 151 | 99 | 494 | 479 | 256 | 278 | 271 |
| Link Distance (ft) | | 341 | 341 | | 193 | 193 | | 517 | 517 | | | 1666 |
| Upstream Blk Time (%) | | | | | 18 | 0 | | 1 | 0 | | | |
| Queuing Penalty (veh) | | | | | 63 | 1 | | 7 | 4 | | | |
| Storage Bay Dist (ft) | 205 | | | 95 | | | 355 | | | 375 | 430 | |
| Storage Blk Time (%) | | | | 12 | 45 | | | 10 | 5 | | | |
| Queuing Penalty (veh) | | | | 40 | 63 | | | 4 | 23 | | | |

Intersection: 1: Hiawatha Ave & E 46th Street

| Movement | SB |
|-----------------------|------|
| Directions Served | T |
| Maximum Queue (ft) | 289 |
| Average Queue (ft) | 180 |
| 95th Queue (ft) | 271 |
| Link Distance (ft) | 1666 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |

Intersection: 2: Holiday Driveway & E 46th Street

| Movement | EB | EB | WB | WB | WB | NB |
|-----------------------|-----|-----|----|-----|-----|-----|
| Directions Served | T | TR | L | T | T | LR |
| Maximum Queue (ft) | 38 | 37 | 52 | 260 | 53 | 204 |
| Average Queue (ft) | 2 | 5 | 29 | 67 | 2 | 163 |
| 95th Queue (ft) | 16 | 22 | 55 | 202 | 38 | 232 |
| Link Distance (ft) | 193 | 193 | | 180 | 180 | 166 |
| Upstream Blk Time (%) | | | | 4 | 0 | 80 |
| Queuing Penalty (veh) | | | | 14 | 0 | 0 |
| Storage Bay Dist (ft) | | | 20 | | | |
| Storage Blk Time (%) | | | 24 | 7 | | |
| Queuing Penalty (veh) | | | 76 | 4 | | |

Queuing and Blocking Report
2022 No Build Conditions - PM Peak Hour

06/22/2020

Intersection: 3: Snelling Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | SB |
|-----------------------|-----|-----|-----|-----|-----|-----|------|----|-----|
| Directions Served | L | T | TR | L | T | TR | LT | R | LTR |
| Maximum Queue (ft) | 102 | 212 | 210 | 116 | 260 | 203 | 135 | 75 | 56 |
| Average Queue (ft) | 23 | 69 | 75 | 21 | 74 | 38 | 66 | 24 | 19 |
| 95th Queue (ft) | 62 | 158 | 165 | 65 | 205 | 135 | 126 | 69 | 46 |
| Link Distance (ft) | | 180 | 180 | | 238 | 238 | 1051 | | 692 |
| Upstream Blk Time (%) | | 0 | 0 | | 1 | 0 | | | |
| Queuing Penalty (veh) | | 1 | 2 | | 4 | 0 | | | |
| Storage Bay Dist (ft) | 135 | | | 140 | | | | 50 | |
| Storage Blk Time (%) | | 1 | | | 4 | | 27 | 1 | |
| Queuing Penalty (veh) | | 1 | | | 2 | | 8 | 1 | |

Intersection: 4: Alleyway & E 46th Street

| Movement | EB | EB | EB | WB | NB |
|-----------------------|----|-----|-----|----|-----|
| Directions Served | T | T | TR | T | R |
| Maximum Queue (ft) | 89 | 279 | 273 | 38 | 31 |
| Average Queue (ft) | 15 | 57 | 70 | 2 | 6 |
| 95th Queue (ft) | 64 | 184 | 189 | 31 | 24 |
| Link Distance (ft) | | 238 | 238 | 44 | 972 |
| Upstream Blk Time (%) | | 1 | 1 | 0 | |
| Queuing Penalty (veh) | | 4 | 4 | 1 | |
| Storage Bay Dist (ft) | 50 | | | | |
| Storage Blk Time (%) | 2 | 9 | | | |
| Queuing Penalty (veh) | 4 | 22 | | | |

Intersection: 5: Minnehaha Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|------|------|-----|-----|-----|------|
| Directions Served | L | T | TR | L | T | TR | L | TR | L | TR |
| Maximum Queue (ft) | 131 | 131 | 136 | 185 | 382 | 372 | 100 | 410 | 220 | 443 |
| Average Queue (ft) | 70 | 97 | 107 | 66 | 173 | 156 | 24 | 176 | 95 | 196 |
| 95th Queue (ft) | 122 | 146 | 146 | 160 | 306 | 285 | 79 | 319 | 204 | 364 |
| Link Distance (ft) | 44 | 44 | 44 | | 1462 | 1462 | | 896 | | 1018 |
| Upstream Blk Time (%) | 23 | 33 | 44 | | | | | | | |
| Queuing Penalty (veh) | 60 | 86 | 112 | | | | | | | |
| Storage Bay Dist (ft) | | | | 120 | | | 40 | | 170 | |
| Storage Blk Time (%) | | | | 1 | 24 | | 3 | 48 | 1 | 13 |
| Queuing Penalty (veh) | | | | 2 | 27 | | 10 | 12 | 4 | 20 |

Queuing and Blocking Report
2022 No Build Conditions - PM Peak Hour

06/22/2020

Intersection: 6: Minnehaha Ave & Nawadaha Ave

| Movement | EB | NB | SB |
|-----------------------|-----|-----|-----|
| Directions Served | LR | LT | TR |
| Maximum Queue (ft) | 70 | 70 | 4 |
| Average Queue (ft) | 31 | 11 | 0 |
| 95th Queue (ft) | 58 | 47 | 3 |
| Link Distance (ft) | 423 | 443 | 896 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

Intersection: 7: Hiawatha Ave & Burger King Drive

| Movement | WB | NB | NB |
|-----------------------|-----|-----|-----|
| Directions Served | R | T | T |
| Maximum Queue (ft) | 87 | 33 | 25 |
| Average Queue (ft) | 32 | 1 | 1 |
| 95th Queue (ft) | 72 | 18 | 18 |
| Link Distance (ft) | 271 | 781 | 781 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

Network Summary

Network wide Queuing Penalty: 686

1: Hiawatha Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------|------|------|------|------|------|------|------|------|-----|------|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.4 | 0.2 | 2.2 |
| Total Del/Veh (s) | 27.9 | 40.4 | 43.0 | 39.4 | 50.3 | 12.2 | 52.2 | 46.1 | 5.4 | 48.5 | 24.4 | 3.8 |

1: Hiawatha Ave & E 46th Street Performance by movement

| Movement | All |
|--------------------|------|
| Denied Del/Veh (s) | 0.2 |
| Total Del/Veh (s) | 33.2 |

2: Holiday Driveway & E 46th Street Performance by movement

| Movement | EBT | EBR | WBL | WBT | NBL | NBR | All |
|--------------------|-----|-----|------|-----|------|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 3.5 | 4.3 | 0.3 |
| Total Del/Veh (s) | 5.7 | 5.2 | 14.0 | 5.0 | 70.6 | 29.5 | 8.3 |

3: Snelling Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBR | SBL | SBR | All |
|--------------------|------|-----|-----|-----|-----|-----|------|-----|------|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 3.6 | 0.1 | 0.1 | 0.1 |
| Total Del/Veh (s) | 10.0 | 5.2 | 3.3 | 9.7 | 8.0 | 1.7 | 46.4 | 8.4 | 42.6 | 10.6 | 8.5 |

4: Alleyway & E 46th Street Performance by movement

| Movement | EBT | EBR | WBT | NBR | All |
|--------------------|-----|-----|-----|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Del/Veh (s) | 6.1 | 3.5 | 1.9 | 28.0 | 4.3 |

5: Minnehaha Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 2.4 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 3.5 | 0.4 | 0.5 |
| Total Del/Veh (s) | 30.3 | 28.2 | 18.8 | 34.2 | 42.7 | 22.3 | 23.5 | 23.5 | 13.9 | 20.6 | 21.4 | 14.7 |

5: Minnehaha Ave & E 46th Street Performance by movement

| Movement | All |
|--------------------|------|
| Denied Del/Veh (s) | 0.4 |
| Total Del/Veh (s) | 29.1 |

6: Minnehaha Ave & Nawadaha Ave Performance by movement

| Movement | EBL | EBR | NBL | NBT | SBT | SBR | All |
|--------------------|-----|-----|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.1 |
| Total Del/Veh (s) | 7.3 | 3.7 | 2.5 | 0.3 | 2.0 | 1.9 | 1.6 |

7: Hiawatha Ave & Burger King Drive Performance by movement

| Movement | WBR | NBT | NBR | SBT | All |
|--------------------|------|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.4 | 2.1 | 0.0 | 0.3 |
| Total Del/Veh (s) | 13.0 | 1.4 | 0.7 | 2.8 | 2.2 |

Total Network Performance

| | |
|--------------------|------|
| Denied Del/Veh (s) | 0.6 |
| Total Del/Veh (s) | 49.0 |

Queuing and Blocking Report
2022 Build Conditions - AM Peak Hour

06/24/2020

Intersection: 1: Hiawatha Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Directions Served | L | T | TR | L | LT | R | L | T | T | R | L | T |
| Maximum Queue (ft) | 113 | 122 | 136 | 145 | 286 | 116 | 222 | 511 | 494 | 285 | 203 | 314 |
| Average Queue (ft) | 38 | 52 | 44 | 114 | 187 | 32 | 15 | 342 | 316 | 27 | 92 | 169 |
| 95th Queue (ft) | 84 | 105 | 102 | 180 | 312 | 76 | 108 | 489 | 461 | 207 | 170 | 271 |
| Link Distance (ft) | | 341 | 341 | | 193 | 193 | | 517 | 517 | | | 1666 |
| Upstream Blk Time (%) | | | | | 15 | | | 0 | 0 | | | |
| Queuing Penalty (veh) | | | | | 44 | | | 2 | 1 | | | |
| Storage Bay Dist (ft) | 205 | | | 95 | | | 355 | | | 375 | 430 | |
| Storage Blk Time (%) | | | | 9 | 37 | | | 9 | 3 | | | 0 |
| Queuing Penalty (veh) | | | | 26 | 57 | | | 2 | 13 | | | 0 |

Intersection: 1: Hiawatha Ave & E 46th Street

| Movement | SB |
|-----------------------|------|
| Directions Served | T |
| Maximum Queue (ft) | 292 |
| Average Queue (ft) | 155 |
| 95th Queue (ft) | 258 |
| Link Distance (ft) | 1666 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |

Intersection: 2: Holiday Driveway & E 46th Street

| Movement | EB | EB | WB | WB | WB | NB |
|-----------------------|-----|-----|----|-----|-----|-----|
| Directions Served | T | TR | L | T | T | LR |
| Maximum Queue (ft) | 39 | 56 | 54 | 251 | 32 | 172 |
| Average Queue (ft) | 2 | 5 | 29 | 58 | 1 | 66 |
| 95th Queue (ft) | 16 | 31 | 55 | 195 | 24 | 135 |
| Link Distance (ft) | 193 | 193 | | 180 | 180 | 166 |
| Upstream Blk Time (%) | | | | 3 | 0 | 2 |
| Queuing Penalty (veh) | | | | 10 | 0 | 0 |
| Storage Bay Dist (ft) | | | 20 | | | |
| Storage Blk Time (%) | | | 11 | 6 | | |
| Queuing Penalty (veh) | | | 29 | 4 | | |

Queuing and Blocking Report
2022 Build Conditions - AM Peak Hour

06/24/2020

Intersection: 3: Snelling Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | SB |
|-----------------------|-----|-----|-----|-----|-----|-----|------|----|-----|
| Directions Served | L | T | TR | L | T | TR | LT | R | LTR |
| Maximum Queue (ft) | 73 | 150 | 147 | 67 | 312 | 114 | 157 | 73 | 87 |
| Average Queue (ft) | 16 | 47 | 54 | 12 | 86 | 17 | 51 | 13 | 27 |
| 95th Queue (ft) | 49 | 121 | 126 | 53 | 240 | 70 | 114 | 47 | 62 |
| Link Distance (ft) | | 180 | 180 | | 238 | 238 | 1051 | | 692 |
| Upstream Blk Time (%) | | 0 | 0 | | 2 | | | | |
| Queuing Penalty (veh) | | 0 | 0 | | 5 | | | | |
| Storage Bay Dist (ft) | 135 | | | 140 | | | | 50 | |
| Storage Blk Time (%) | 0 | 0 | | | 5 | | 17 | 0 | |
| Queuing Penalty (veh) | 0 | 0 | | | 1 | | 3 | 0 | |

Intersection: 4: Alleyway & E 46th Street

| Movement | EB | EB | EB | WB | NB |
|-----------------------|----|-----|-----|----|-----|
| Directions Served | T | T | TR | T | R |
| Maximum Queue (ft) | 83 | 200 | 209 | 87 | 68 |
| Average Queue (ft) | 13 | 32 | 45 | 5 | 12 |
| 95th Queue (ft) | 57 | 127 | 144 | 47 | 43 |
| Link Distance (ft) | | 238 | 238 | 44 | 972 |
| Upstream Blk Time (%) | | 1 | 1 | 1 | |
| Queuing Penalty (veh) | | 2 | 2 | 3 | |
| Storage Bay Dist (ft) | 50 | | | | |
| Storage Blk Time (%) | 2 | 4 | | | |
| Queuing Penalty (veh) | 4 | 9 | | | |

Intersection: 5: Minnehaha Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|------|------|----|-----|-----|------|
| Directions Served | L | T | TR | L | T | TR | L | TR | L | TR |
| Maximum Queue (ft) | 140 | 139 | 148 | 185 | 405 | 362 | 87 | 219 | 166 | 260 |
| Average Queue (ft) | 73 | 88 | 103 | 60 | 198 | 139 | 12 | 90 | 40 | 111 |
| 95th Queue (ft) | 129 | 146 | 147 | 159 | 346 | 276 | 45 | 174 | 101 | 211 |
| Link Distance (ft) | 44 | 44 | 44 | | 1462 | 1462 | | 896 | | 1018 |
| Upstream Blk Time (%) | 24 | 28 | 42 | | | | | | | |
| Queuing Penalty (veh) | 49 | 57 | 87 | | | | | | | |
| Storage Bay Dist (ft) | | | | 120 | | | 40 | | 170 | |
| Storage Blk Time (%) | | | | 0 | 27 | | 1 | 27 | 0 | 3 |
| Queuing Penalty (veh) | | | | 0 | 22 | | 3 | 6 | 0 | 2 |

Intersection: 6: Minnehaha Ave & Nawadaha Ave

| Movement | EB | NB |
|-----------------------|-----|-----|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 77 | 49 |
| Average Queue (ft) | 28 | 3 |
| 95th Queue (ft) | 59 | 24 |
| Link Distance (ft) | 423 | 443 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

Intersection: 7: Hiawatha Ave & Burger King Drive

| Movement | WB | NB |
|-----------------------|-----|-----|
| Directions Served | R | T |
| Maximum Queue (ft) | 57 | 6 |
| Average Queue (ft) | 20 | 0 |
| 95th Queue (ft) | 45 | 4 |
| Link Distance (ft) | 271 | 781 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

Network Summary

Network wide Queuing Penalty: 445

1: Hiawatha Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------|------|------|------|------|------|------|------|------|-----|------|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 0.3 | 2.2 |
| Total Del/Veh (s) | 35.1 | 41.9 | 40.7 | 44.4 | 57.6 | 14.2 | 58.9 | 56.8 | 6.7 | 54.9 | 26.7 | 4.0 |

1: Hiawatha Ave & E 46th Street Performance by movement

| Movement | All |
|--------------------|------|
| Denied Del/Veh (s) | 0.2 |
| Total Del/Veh (s) | 38.0 |

2: Holiday Driveway & E 46th Street Performance by movement

| Movement | EBT | EBR | WBL | WBT | NBL | NBR | All |
|--------------------|-----|-----|------|-----|-------|-------|------|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 405.7 | 400.1 | 32.1 |
| Total Del/Veh (s) | 6.5 | 6.6 | 26.7 | 6.4 | 245.3 | 194.5 | 20.9 |

3: Snelling Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBR | SBL | SBR | All |
|--------------------|------|-----|-----|------|-----|-----|------|------|------|-----|------|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 3.6 | 0.2 | 0.1 | 0.1 |
| Total Del/Veh (s) | 12.5 | 6.7 | 4.9 | 11.4 | 9.6 | 2.6 | 44.6 | 10.7 | 54.2 | 9.9 | 10.1 |

4: Alleyway & E 46th Street Performance by movement

| Movement | EBT | EBR | WBT | NBR | All |
|--------------------|-----|------|-----|------|-----|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Del/Veh (s) | 8.4 | 11.3 | 1.5 | 33.3 | 5.4 |

5: Minnehaha Ave & E 46th Street Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.0 | 0.0 | 0.0 | 2.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 3.3 | 0.7 | 0.7 |
| Total Del/Veh (s) | 31.2 | 26.3 | 17.9 | 36.5 | 39.3 | 28.1 | 44.1 | 38.5 | 30.5 | 32.1 | 31.4 | 24.7 |

5: Minnehaha Ave & E 46th Street Performance by movement

| Movement | All |
|--------------------|------|
| Denied Del/Veh (s) | 0.5 |
| Total Del/Veh (s) | 32.2 |

6: Minnehaha Ave & Nawadaha Ave Performance by movement

| Movement | EBL | EBR | NBL | NBT | SBT | SBR | All |
|--------------------|------|-----|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.2 | 0.2 | 0.4 | 0.3 | 0.0 | 0.0 | 0.2 |
| Total Del/Veh (s) | 12.3 | 4.8 | 4.3 | 0.7 | 2.6 | 2.1 | 2.3 |

7: Hiawatha Ave & Burger King Drive Performance by movement

| Movement | WBR | NBT | NBR | SBT | All |
|--------------------|------|-----|-----|-----|-----|
| Denied Del/Veh (s) | 0.1 | 0.5 | 2.3 | 0.0 | 0.3 |
| Total Del/Veh (s) | 23.4 | 2.0 | 0.9 | 3.2 | 3.0 |

Total Network Performance

| | |
|--------------------|------|
| Denied Del/Veh (s) | 11.9 |
| Total Del/Veh (s) | 58.7 |

Queuing and Blocking Report
2022 Build Conditions - PM Peak Hour

06/24/2020

Intersection: 1: Hiawatha Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Directions Served | L | T | TR | L | LT | R | L | T | T | R | L | T |
| Maximum Queue (ft) | 110 | 138 | 126 | 145 | 294 | 157 | 252 | 540 | 520 | 437 | 288 | 312 |
| Average Queue (ft) | 41 | 66 | 56 | 120 | 196 | 59 | 40 | 373 | 352 | 76 | 177 | 188 |
| 95th Queue (ft) | 86 | 121 | 114 | 182 | 315 | 126 | 169 | 537 | 516 | 336 | 273 | 287 |
| Link Distance (ft) | | 341 | 341 | | 193 | 193 | | 517 | 517 | | | 1666 |
| Upstream Blk Time (%) | | | | | 19 | 0 | | 2 | 1 | | | |
| Queuing Penalty (veh) | | | | | 66 | 0 | | 16 | 11 | | | |
| Storage Bay Dist (ft) | 205 | | | 95 | | | 355 | | | 375 | 430 | |
| Storage Blk Time (%) | | | | 12 | 48 | | | 15 | 8 | | | |
| Queuing Penalty (veh) | | | | 38 | 68 | | | 6 | 37 | | | |

Intersection: 1: Hiawatha Ave & E 46th Street

| Movement | SB |
|-----------------------|------|
| Directions Served | T |
| Maximum Queue (ft) | 318 |
| Average Queue (ft) | 183 |
| 95th Queue (ft) | 280 |
| Link Distance (ft) | 1666 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |

Intersection: 2: Holiday Driveway & E 46th Street

| Movement | EB | EB | WB | WB | WB | NB |
|-----------------------|-----|-----|----|-----|-----|-----|
| Directions Served | T | TR | L | T | T | LR |
| Maximum Queue (ft) | 59 | 60 | 51 | 282 | 46 | 216 |
| Average Queue (ft) | 4 | 6 | 30 | 87 | 3 | 171 |
| 95th Queue (ft) | 25 | 34 | 55 | 250 | 40 | 224 |
| Link Distance (ft) | 193 | 193 | | 180 | 180 | 166 |
| Upstream Blk Time (%) | | | | 6 | 0 | 85 |
| Queuing Penalty (veh) | | | | 21 | 0 | 0 |
| Storage Bay Dist (ft) | | | 20 | | | |
| Storage Blk Time (%) | | | 21 | 8 | | |
| Queuing Penalty (veh) | | | 66 | 5 | | |

Queuing and Blocking Report
2022 Build Conditions - PM Peak Hour

06/24/2020

Intersection: 3: Snelling Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | SB |
|-----------------------|-----|-----|-----|-----|-----|-----|------|----|-----|
| Directions Served | L | T | TR | L | T | TR | LT | R | LTR |
| Maximum Queue (ft) | 106 | 198 | 182 | 168 | 298 | 180 | 174 | 76 | 46 |
| Average Queue (ft) | 27 | 69 | 75 | 25 | 106 | 32 | 63 | 26 | 22 |
| 95th Queue (ft) | 68 | 156 | 155 | 98 | 248 | 114 | 129 | 72 | 47 |
| Link Distance (ft) | | 180 | 180 | | 238 | 238 | 1051 | | 692 |
| Upstream Blk Time (%) | | 0 | 0 | | 1 | 0 | | | |
| Queuing Penalty (veh) | | 2 | 2 | | 4 | 0 | | | |
| Storage Bay Dist (ft) | 135 | | | 140 | | | | 50 | |
| Storage Blk Time (%) | | 1 | | | 6 | | 27 | 1 | |
| Queuing Penalty (veh) | | 1 | | | 3 | | 8 | 1 | |

Intersection: 4: Alleyway & E 46th Street

| Movement | EB | EB | EB | WB | NB |
|-----------------------|----|-----|-----|----|-----|
| Directions Served | T | T | TR | T | R |
| Maximum Queue (ft) | 90 | 263 | 266 | 65 | 35 |
| Average Queue (ft) | 19 | 51 | 62 | 2 | 5 |
| 95th Queue (ft) | 71 | 176 | 174 | 25 | 23 |
| Link Distance (ft) | | 238 | 238 | 44 | 972 |
| Upstream Blk Time (%) | | 2 | 2 | 0 | |
| Queuing Penalty (veh) | | 7 | 6 | 2 | |
| Storage Bay Dist (ft) | 50 | | | | |
| Storage Blk Time (%) | 4 | 7 | | | |
| Queuing Penalty (veh) | 11 | 19 | | | |

Intersection: 5: Minnehaha Ave & E 46th Street

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | SB | SB |
|-----------------------|-----|-----|-----|-----|------|------|-----|-----|-----|------|
| Directions Served | L | T | TR | L | T | TR | L | TR | L | TR |
| Maximum Queue (ft) | 133 | 136 | 138 | 185 | 506 | 437 | 100 | 371 | 220 | 446 |
| Average Queue (ft) | 76 | 97 | 108 | 70 | 174 | 150 | 29 | 200 | 101 | 200 |
| 95th Queue (ft) | 132 | 143 | 137 | 170 | 342 | 304 | 80 | 339 | 208 | 375 |
| Link Distance (ft) | 44 | 44 | 44 | | 1462 | 1462 | | 896 | | 1018 |
| Upstream Blk Time (%) | 27 | 33 | 43 | | | | | | | |
| Queuing Penalty (veh) | 70 | 87 | 113 | | | | | | | |
| Storage Bay Dist (ft) | | | | 120 | | | 40 | | 170 | |
| Storage Blk Time (%) | | | | 1 | 23 | | 4 | 50 | 1 | 14 |
| Queuing Penalty (veh) | | | | 4 | 26 | | 12 | 15 | 2 | 22 |

Intersection: 6: Minnehaha Ave & Nawadaha Ave

| Movement | EB | NB | SB |
|-----------------------|-----|-----|-----|
| Directions Served | LR | LT | TR |
| Maximum Queue (ft) | 85 | 80 | 9 |
| Average Queue (ft) | 36 | 18 | 0 |
| 95th Queue (ft) | 67 | 56 | 5 |
| Link Distance (ft) | 423 | 443 | 896 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

Intersection: 7: Hiawatha Ave & Burger King Drive

| Movement | WB | NB | NB |
|-----------------------|-----|-----|-----|
| Directions Served | R | T | T |
| Maximum Queue (ft) | 88 | 51 | 45 |
| Average Queue (ft) | 30 | 5 | 3 |
| 95th Queue (ft) | 67 | 42 | 32 |
| Link Distance (ft) | 271 | 781 | 781 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

Network Summary

Network wide Queuing Penalty: 751
